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348  
No. 15630

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United States  
Court of Appeals  
for the Ninth Circuit

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AMERICAN PIPE AND CONSTRUCTION CO.  
Appellant,

vs.

SPENCER A. EARNSHAW, Appellee.

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Transcript of Record

In Two Volumes

VOLUME I.

(Pages 1 to 244, inclusive)

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Appeal from the United States District Court for the  
Southern District of California,  
Central Division

FILED

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PAUL P. DUBOIS, CLERK



No. 15630

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United States  
Court of Appeals  
for the Ninth Circuit

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AMERICAN PIPE AND CONSTRUCTION CO.  
Appellant,

vs.

SPENCER A. EARNSHAW, Appellee.

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For Appellant:

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San Francisco 8, California,

For Appellee:

J. MARION WRIGHT,

Citizens National Bank Building,  
Los Angeles 13, California,

J. CALVIN BROWN,

804 Financial Center Building,  
Los Angeles 14, California. [1]\*

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\* Page numbers appearing at bottom of page of Original Transcript of Record.



In the United States District Court, Southern  
District of California, Central Division

Civil Action No. 20040Y

AMERICAN PIPE AND CONSTRUCTION CO.,  
a corporation of Delaware,                      Petitioner,

vs.

SPENCER A. EARNSHAW,                      Respondent.

### PETITION FOR REMOVAL

Your petitioner American Pipe and Construction Co., a corporation of Delaware, respectfully shows:

1. That on the 7th day of June, 1956, an action was commenced against petitioner in the Superior Court of the State of California in and for the County of Los Angeles, entitled Spencer A. Earnshaw, plaintiff, vs. American Pipe and Construction Co., a corporation, defendant, No. 661,609, by the service upon petitioner of a summons and complaint, true and correct copies of which are annexed hereto and filed herewith; that said summons and complaint were served upon petitioner on the 8th day of June, 1956. No further proceedings have been had therein.

2. The above described action is a civil action of which this Court has original jurisdiction under the provisions of Title 28 United States Code, Section 1332, and is one which may be [2] removed to this Court by the petitioner, defendant therein, pursuant

to the provisions of Title 28 United States Code, Section 1441, in that the matter in controversy in said action exceeds the sum or value of Three Thousand Dollars (\$3,000.00) exclusive of interest and costs, and is between citizens of different states, to wit, the plaintiff in said action is a citizen of the State of California, and the defendant in that action is a corporation organized and existing under and by virtue of the laws of the State of Delaware, and is a citizen and resident of that state.

3. Petitioner points out to the Court that in the complaint paragraph I thereof it is alleged:

“That at all times herein mentioned defendant American Pipe And Construction Co. was and now is a corporation organized and existing under and by virtue of the laws of the State of Delaware.”

Also in the complaint the plaintiff alleges that there is now “due, owing and unpaid to plaintiff for royalties under said agreement the sum of \$125,000.00, no part of which has been paid.” That further in the complaint there is a prayer for judgment against defendant for the sum of \$125,000.00 or whatever sum the Court finds due plaintiff. Therefore, petitioner alleges to the Court that the action is between citizens of different states and that the matter in controversy exceeds the sum or value of \$3,000.00 exclusive of interest and costs.

4. Petitioner files herewith a bond with good and sufficient surety conditioned, as provided by Title 28 United States Code, Section 1446(d) that it will

pay all costs and disbursements incurred by reason of the removal proceedings hereby brought should it be determined that this action is not removable or is improperly removed.

Wherefore, petitioner prays that the above action now [3] pending against it in the Superior Court in and for the County of Los Angeles, State of California, be removed therefrom to this Court.

HILL, FARRER & BURRILL,

/s/ By FRANK D. MacDOWELL,

MELLIN, HANSCOM, & HURSH

/s/ By OSCAR A. MELLIN,

Attorneys for Petitioner. [4]

Duly Verified. [5]

In the Superior Court of the State of California  
in and for the County of Los Angeles

No. 661609

SPENCER A. EARNSHAW,                      Plaintiff,

vs.

AMERICAN PIPE AND CONSTRUCTION CO.,  
a corporation,                      Defendant.

### SUMMONS

The people of the State of California send Greetings to: American Pipe And Construction Co.,  
a corporation, Defendant.

You are directed to appear in an action brought

against you by the above named plaintiff in the Superior Court of the State of California, in and for the County of Los Angeles, and to answer the Complaint therein within ten days after the service on you of this Summons, if served within the County of Los Angeles, or within thirty days if served elsewhere and you are notified that unless you appear and answer as above required, the plaintiff will take judgment for any money or damages demanded in the Complaint, as arising upon contract, or will apply to the Court for any other relief demanded in the Complaint.

[Seal]      HAROLD J. OSTLY,  
County Clerk and Clerk of the Superior Court of  
the State of California, in and for the County  
of Los Angeles.

By M. W. NELSON,  
Deputy. [6]

[Title of Superior Court and Cause.]

## COMPLAINT

[Money Due for Royalties Under Contract]

Plaintiff complains of defendant above named,  
and alleges:

### I.

That at all times herein mentioned defendant American Pipe and Construction Co. was and now is a corporation organized and existing under and by virtue of the laws of the State of Delaware. That



on or about May 6, 1929 said corporation qualified to do business in California, and ever since said date has been qualified to and has been carrying on and conducting business in the State of California. That the name and address of the designated agent for the service of process is Theodore Sirene, 510 South Spring Street, Los Angeles 13, California.

## II.

That on or about February 8, 1944, plaintiff was the sole owner of United States patent No. 2168329 issued August 8, 1939 for a plastering machine and method. That on or about February 8, 1944 [7] plaintiff and defendant entered into a written option agreement, a copy of which is attached hereto and made a part hereof, the same as if specifically set forth herein, and marked Exhibit "A".

## III.

That under the terms of said agreement plaintiff granted to defendant, and defendant accepted said grant for a period of six months from February 8, 1944 of an option to make use of said patent in consideration of the sum of \$200.00, which was paid by defendant to plaintiff.

## IV.

Said agreement further provided that if before the expiration of said six months option defendant should notify plaintiff that it exercised said option, that plaintiff then granted to defendant the exclusive license to use patented devices and methods

covered by said patent throughout the United States and territories and possessions of the United States in the manufacture and/or coating, and/or lining of pipe made of any material during the remaining life of said patent, except coating of pipe that had been installed in buildings, ships, refineries or other plants for the circulation of any liquids or other commodities.

#### V.

That thereafter, on or about July 28, 1944, defendant in writing exercised said option, a copy of said writing being attached hereto, made a part hereof, and marked Exhibit "B".

#### VI.

That said agreement further provided that in the event defendant exercised said option, that it would pay to plaintiff one-fifth of one cent per square foot of coating or lining applied in accordance with Earnshaw's patents to the inside or the outside of pipe of any material manufactured by defendant, its subsidiaries or assigns during the remainder of the life of said patent. That said patent is still in full force and effect. [8]

#### VII.

Said agreement further provides that in the event defendant exercised said option, it agreed during the life of said option agreement to diligently promote and endeavor to sell pipe made in accordance with the processes and methods of said patent. That on or about February 26, 1951, by mutual written



agreement the option agreement of February 8, 1944 was modified by changing the royalty mentioned therein from one-fifth of one cent per square foot, to two-fifths of one cent per square foot, and to increase the minimum royalty mentioned in Paragraph (9) of said agreement from \$25.00 per month to \$50.00 per month, the increase in royalty to become effective as of March 1, 1951. That said agreement further provides that if either plaintiff or defendant invents any improvements on the processes and the methods of patent No. 2168329 which in the judgment of defendant are applicable to the manufacture or lining or coating of pipe, that said improvements shall inure to the benefit of both parties on the terms set forth in said agreement, and that defendant would pay the costs of patenting the same. That plaintiff invented and received patents on improvements to the processes and methods of said patent, but defendant did not pay the costs of patenting same, although defendant has had the use and benefit thereof.

### VIII.

That during the entire time said agreement of February 8, 1944 has been in effect, said defendant has never paid any royalties to plaintiff other than the minimum royalties as provided in said agreement, although plaintiff is informed and believes and therefore alleges that said defendant has continuously coated and/or lined and applied to the inside or outside of pipe of material manufactured by defendant and its subsidiaries and/or assigns,

and is still coating and lining same by using the methods and process covered by plaintiffs patents. That plaintiff is informed and believes and therefore alleges that there is now due, owing and unpaid to plaintiff [9] for royalties under said agreement the sum of \$125,000.00, no part of which has been paid. Plaintiff asks leave of court to amend the complaint to increase said sum should it develop from the evidence that there is a greater sum than \$125,000.00 due and payable to plaintiff.

### IX.

That said agreement further provides that during the life thereof plaintiff, or his accredited representative, will have the right to examine the books and accounts of defendant at reasonable hours in order to check the calculation of royalties due plaintiff under said agreement. That plaintiff has heretofore on numerous occasion requested defendant to pay the royalties due him and make an accounting as to royalties, but that defendant has failed and refused to do so, and has notified plaintiff that there is nothing due him, and that plaintiff does not know, and is unable to allege, the exact amount of royalties and sums due him from defendant, but the exact amount thereof is known to defendant.

### X.

Plaintiff has performed all of the terms, conditions and provisions to be performed by him under the terms of said agreement, but that said defendant has failed and refused to perform said agreement

in that it has failed to render an accounting to plaintiff, or to allow him or his accredited representative to inspect the books and records, and has failed and refused to pay any royalties other than the minimum.

Wherefore, plaintiff prays judgment against defendant as follows:

(1) For the sum of \$125,000.00, or whatever sum the court finds due plaintiff under the terms of said agreement;

(2) For interest thereon from the date same became due and payable; [10]

(3) For an accounting to determine the number of square feet of coating or lining applied by defendant to the inside or outside of pipe, or by its subsidiaries or assigns, under said agreement, and the amount due plaintiff by reason thereof;

(4) For costs of suit; and

(5) For any other and further relief to which plaintiff may be entitled. [11]

J. MARION WRIGHT,  
Attorney for Plaintiff.

## EXHIBIT "A"

### OPTION AGREEMENT

This Agreement, made and entered into this 8th day of February, 1944, by and between Spencer A. Earnshaw, 143 East 77th Street, Los Angeles, California, hereinafter called "Earnshaw", and the American Pipe And Construction Co., a Delaware

corporation with principal offices located at 4635 Firestone Boulevard, South Gate, California, hereinafter called "American",

Witnesseth:

(1) Whereas, Earnshaw is the sole owner of a United States Patent, No. 2168329, issued August 8, 1939, for a plastering machine and method, and

(2) Whereas, American is desirous of experimenting and testing the methods and apparatus controlled by the said patent in the manufacture and/or lining and/or coating of pipe made of any material,

(3) Now Therefore, it is agreed by and between the parties hereto that Earnshaw grants to American, and American accepts the said grant, for a period of six (6) months from date hereof, of an option to make use of the said patent, all in consideration of the sum of Two Hundred Dollars (\$200.00) paid by American to Earnshaw, the receipt of which is hereby acknowledged, and such royalties as may accrue within that time as provided in Paragraph 7 hereof.

(4) If, on or before the expiration of the six (6) months' option, American should notify Earnshaw by registered letter to his last known address that American will exercise the option herein contained, Earnshaw hereby grants to American the exclusive license to use patented devices and methods covered by said patent throughout the United States and territories and possessions of the United States in the manufacture and/or coating and/or lining of



pipe made of any material during the remaining life of the said patent, except coating of pipe that has been installed in buildings, ships, refineries or other plants for the circulation of any liquids or other commodities. [12]

(5) Earnshaw retains all other rights to the use of the patented devices and methods for any other purposes than the ones specifically conveyed to American in Paragraph 4.

(6) In the event American exercises the option as stated above, American agrees to pay to Earnshaw, and Earnshaw agrees to accept, one-fifth ( $1/5$ th) of one cent (1¢) per square foot of coating or lining, in accordance with Earnshaw's patents, applied to the inside or outside of pipe of any material manufactured by American, its subsidiaries or assigns during the remainder of the life of the said patent (Patent No. 2168329).

(7) In the event American uses the said patents in the manufacture, or lining, or coating of any pipe for commercial purposes or sale during the six months' option period, American agrees to pay to Earnshaw a royalty on the foregoing basis of one-fifth ( $1/5$ th) of one cent (1¢) per square foot.

(8) All royalties shall be payable on the fifteenth of the month for all royalty earned during the preceding month.

(9) In the event American exercises its option, then in that event, American agrees during the life of this agreement to pay a minimum royalty of Twenty-Five Dollars (\$25.00) per month, payable quarterly, but the said payment shall be a full credit

to American on earned royalty as the said earned royalty becomes due and payable. If the American fails to pay any quarterly minimum at the time when royalties for said quarter are due under said License Agreement, Earnshaw may at his option give written notice to American that unless such minimum is paid within ninety (90) days from service of such notice the License Agreement will become cancelled and thereupon if such minimum payment is not made within said ninety (90) days, such License Agreement shall therefore be cancelled and at end without other or further act on the part of Earnshaw. [13]

(10) During the life of this agreement, Earnshaw or his accredited representative will have the right to examine the books and accounts of American, at reasonable hours, in order to check the calculation of royalties due Earnshaw hereunder.

(11) If either American or Earnshaw invents any improvements to the processes and methods of Patent No. 2168329 which, in the judgment of American are applicable to the manufacture, or lining, or coating of pipe, the said improvements shall inure to the benefit of both parties, on the terms herein set forth, and American will pay the costs of patenting the same.

(12) It is understood by both parties hereto that American is now using a brush coating machine for the coating of pipe and a centrifugal process for lining pipe, and it is further understood that American is at liberty to continue to use the said processes

and/or the processes and methods of Patent No. 2168329 at its option. Improvements or patents applicable to the said brush coating machine and/or centrifugal lining process are expressly excluded from the provisions of Paragraph 11 hereof. The improvements and additional patents referred to in Paragraph 11 shall include only such improvements and patents as refer to and are applicable to Patent No. 2168329, a belt lining machine.

(13) In the event American exercises its option, then in that event, American agrees during the life of this agreement to diligently promote and endeavor to sell pipe made in accordance with the processes and methods of Patent No. 2168329, and in the event American fails so to do this License Agreement will be null and void and the same will be cancelled by mutual consent written thereon.

(14) If American elects not to exercise the option on or before the expiration of six (6) months from the date hereof, this agreement will be null and void and American will have no claim whatsoever upon the use of the patent. [14]

In Witness Whereof, each of the parties hereto have caused these presents to be executed the day and year first above written. [15]

SPENCER A. EARNSHAW  
AMERICAN PIPE AND CONSTRUCTION CO.

By H. H. JENKINS,  
Vice President.  
By J. M. MacADAM,  
Secretary.

EXHIBIT "B"

[Letterhead of American Pipe and Construction Co.]

July 28, 1944

Mr. Spencer A. Earnshaw,  
143 East 77th Street,  
Los Angeles 3, California.

Dear Sir:

In accordance with the "Option Agreement" entered into by you and the undersigned corporation on the date of February 8, 1944 and in especial accordance with the provisions of Paragraph Nine (9) thereof, we now exercise our option, as stated in the said agreement.

We therefore enclose our check for \$37.07 to pay the minimum royalty provided for in the said agreement, for the period from August 8, 1944 to November 8, 1944. The said minimum royalty is \$75.00 for the said period, less \$37.93, the agreed payment for an electric motor sold by us to you on July 14, 1944.

Very truly yours,

AMERICAN PIPE AND CONSTRUCTION CO.

By J. M. MacADAM,  
Secretary.

JMM:al

Enclosure-1 (Check)

[Endorsed]: Filed June 13, 1956.



In The United States District Court, Southern  
District of California, Central Division

Civil Action No. 20040Y

AMERICAN PIPE AND CONSTRUCTION CO.,  
a corporation of Delaware,                      Petitioner,

vs.

SPENCER A. EARNSHAW,                      Respondent.

NOTICE

To Spencer A. Earnshaw and to J. Marion Wright,  
His Attorney;

You and Each of You Are Hereby Notified that  
on this day of June 13, 1956, we have filed in the  
United States District Court, Southern District of  
California, Central Division, a Petition For Re-  
moval accompanied by a bond all as required by the  
Federal Rules of Civil Procedure, copies of which  
Petition For Removal and bond are attached hereto  
and form a part hereof.

HILL, FARRER & BURRILL,  
/s/ By FRANK D. MacDOWELL,

MELLIN, HANSCOM & HURSH,  
/s/ By OSCAR A. MELLIN,  
Attorneys for Petitioner. [17]

[Title of District Court and Cause.]

### BOND ON REMOVAL

Know All Men By These Presents: That the Hartford Accident and Indemnity Company, a corporation duly organized and existing under the laws of the State of Connecticut and authorized to transact business in the State of California, is held and firmly bound unto the above named Plaintiff, in the sum of Five Hundred and No/100 (\$500.00) Dollars, for which payment well and truly to be made it binds itself, its successors and assigns, jointly and severally, firmly by these presents;

Whereas, the above plaintiff has commenced in an action and issued summons therein in the Superior Court of the State of California in and for the County of Los Angeles, against the above named defendants; and

Whereas, the defendant American Pipe and Construction Co., a Corporation, has filed its petition for the removal of said action from said Superior Court to this District Court of the United States, pursuant to the provisions of 28 U.S.C.A. #1446.

Now Therefore, the undersigned, Hartford Accident and Indemnity Company, a corporation, organized and existing under the laws of the State of Connecticut and authorized to transact surety business in the State of California, in a consideration of the premises and in compliance with 28 U.S.C.A. #1446, does undertake in the sum of Five Hundred and No/100 (\$500.00) Dollars, and promises to the effect that in should it be determined that

the aforesaid action was not removable or was improperly removed from said Superior Court to this District Court of the United States, said Hartford Accident and Indemnity Company will pay all costs and disbursements incurred by reason of said removal proceedings.

Signed, Sealed and Dated this 12th day of June, 1956.

HARTFORD ACCIDENT &  
INDEMNITY COMPANY,

By V. J. KLAUS,  
Attorney-in-Fact.

State of California,  
County of Los Angeles—ss.

On this 12th day of June, in the year 1956, before me, Marietta Jenkins, a Notary Public in and for said County, residing therein, duly commissioned and sworn, personally appeared V. J. Klaus, known to me to be the Attorney-in-Fact of the Hartford Accident and Indemnity Company, the Corporation described in and that executed the within instrument, and also known to me to be the person—who executed it on behalf of the Corporation therein named, and—he acknowledged to me that such Corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

[Seal] MARIETTA JENKINS,  
Notary Public in and for the County of Los Ange-

les, State of California. My Commission Expires  
March 2, 1959. [33]

Acknowledgment of Service Attached. [34]

[Endorsed]: Filed June 13, 1956.

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[Title of District Court and Cause.]

DEFENDANT'S ANSWER TO COMPLAINT  
AND DEFENDANT'S CROSS-COMPLAINT

Comes Now American Pipe and Construction Co., defendant above named, and in answer to the Complaint on file herein, admits, denies and alleges as follows:

I.

Answering paragraph I of the Complaint, defendant, American Pipe and Construction Co., admits the allegations thereof.

II.

Answering paragraph II of the Complaint, defendant, [35] American Pipe and Construction Co., admits that alleged United States Letters Patent No. 2,168,329 issued on August 8, 1939; admits that defendant and plaintiff entered into a written agreement, a copy of which is attached to the Complaint and made a part thereof and marked "Exhibit A"; and except for those things expressly admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph II contained.

## III.

Answering paragraph III of the Complaint, defendant, American Pipe and Construction Co., admits that pursuant to the terms of said agreement "Exhibit A" to the Complaint, defendant paid to the plaintiff the sum of \$200.00; and except for those things expressly admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph III contained.

## IV.

Answering paragraph IV of the Complaint, defendant, American Pipe and Construction Co., admits that by the agreement marked "Exhibit A" to the Complaint, plaintiff granted to defendant certain licenses, as is expressly provided by said agreement marked "Exhibit A"; and except for those things expressly admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph IV contained.

## V.

Answering paragraph V of the Complaint, defendant, [36] American Pipe and Construction Co., admits that on or about July 28, 1944, defendant, in writing, exercised an option set out and specified in the agreement marked "Exhibit A" attached to the Complaint, and that a copy of said writing is attached to the Complaint and made a part thereof and marked "Exhibit B"; and except for those things expressly admitted or denied herein, defendant, both generally and specifically, denies



each and every allegation in paragraph V contained.

## VI.

Answering paragraph VI of the Complaint, defendant, American Pipe and Construction Co., admits that said agreement marked "Exhibit A" and attached to the Complaint provided for royalty payments to plaintiff as set forth in paragraph (6) of said agreement marked "Exhibit A" and attached to the Complaint; defendant alleges that plaintiff's patent No. 2,168,329 expired at the end of the day of August 7, 1956; and except for those matters expressly admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph VI contained.

## VII.

Answering paragraph VII of the Complaint, defendant, American Pipe and Construction Co., admits that the agreement marked "Exhibit A" to the Complaint in paragraph (13) provides as follows:

"In the event American exercises its option, then in that event, American agrees during the life of this agreement to diligently promote and endeavor to sell pipe made in accordance with the processes and [37] methods of Patent No. 2168329, and in the event American fails so to do this License Agreement will be null and void and the same will be cancelled by mutual consent written thereon."

Defendant admits that the agreement marked "Exhibit A" to the Complaint was modified by

changing the royalty mentioned therein from one-fifth ( $1/5$ th) of one cent (1c) per square foot, to two-fifths ( $2/5$ ths) of one cent (1c) per square foot, and to increase the minimum royalty specified in paragraph (9) of said agreement from \$25.00 per month to \$50.00 per month, the increase in royalty to become effective as of March 1, 1951, but defendant, American Pipe and Construction Co., alleges that said changes in said agreement were made without consideration passing to defendant, American Pipe and Construction Co.

Defendant, American Pipe and Construction Co., further admits that said agreement marked "Exhibit A" to the Complaint provides in paragraph (11) thereof as follows:

"If either American or Earnshaw invents any improvements to the processes and methods of Patent No. 2168329 which, in the judgment of American are applicable to the manufacture, or lining, or coating of pipe, the said improvements shall inure to the benefit of both parties, on the terms herein set forth, and American will pay the costs of patenting the same."

Defendant, American Pipe and Construction Co., specifically denies that plaintiff invented and received patents on improvements to the processes and methods of said patent [38] No. 2,168,329; defendant further specifically denies that it has had the use and benefit of any invention or improvements, patented, unpatented or otherwise, belonging to plaintiff; and except for those things specifically admitted or denied herein, defendant, both

generally and specifically, denies each and every allegation in paragraph VII contained.

### VIII.

Answering paragraph VIII of the Complaint, defendant, American Pipe and Construction Co., admits that it has not paid royalties to plaintiff other than the minimum royalties as provided for in said agreement. Defendant specifically denies that it has continuously, or otherwise, coated and/or lined and applied to the inside or outside of pipe of material manufactured by defendant and its subsidiaries and/or assigns, and is still coating and lining the same, by any process or apparatus coming within the scope of any patents owned or controlled by plaintiff, including patents Nos. 2,168,329, 2,639,943, 2,681,725 and 2,639,942.

Defendant, American Pipe and Construction Co., further specifically denies that there is now due, owing and unpaid to plaintiff for royalties under said agreement the sum of \$125,000.00, or any sum.

Except for those matters specifically admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph VIII contained.

### IX.

Answering paragraph IX of the Complaint, defendant, American Pipe and Construction Co., admits that the agreement marked "Exhibit A" to the Complaint provides in paragraph (10) [39] thereof as follows:



“During the life of this agreement, Earnshaw or his accredited representative will have the right to examine the books and accounts of American, at reasonable hours, in order to check the calculation of royalties due Earnshaw hereunder.”

Except for those matters specifically admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph IX contained.

### X.

Answering paragraph X of the Complaint, defendant, American Pipe and Construction Co., admits that it has not paid royalties under the terms of the agreement marked “Exhibit A” to the Complaint, other than the minimum royalties provided for thereby for the reason that defendant has not manufactured, sold or used any of the things alleged to be patented in and by patent No. 2,168,329; and except for those matters and things specifically admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph X contained.

### XI.

For further answer to the Complaint, defendant, American Pipe and Construction Co., alleges that it has performed all of the terms, conditions and provisions to be performed by it under the terms of said agreement marked “Exhibit A” to the Complaint. [40]

## XII.

Defendant, American Pipe and Construction Co., alleges that at no time has it, its subsidiaries or assigns, or anyone acting for it or them, manufactured, sold or used any device or machine coming within the scope of any of the claims of Letters Patent No. 2,168,329.

## XIII.

Further answering the Complaint, defendant, American Pipe and Construction Co., alleges that at no time has it, its subsidiaries or assigns, or anyone acting for them, manufactured, sold or used any device coming within the scope of any of the claims of plaintiff's alleged patents on alleged improvements to the processes and methods of patent No. 2,168,329, which patents are identified as patents Nos. 2,638,942, 2,639,943 and 2,681,725; and defendant further alleges that said three patents last identified are not patents on improvements to the processes and methods of said patent No. 2,168,329.

## XIV.

Further answering the Complaint, defendant, American Pipe and Construction Co., alleges that plaintiff's alleged patents Nos. 2,639,942, 2,639,943 and 2,681,725 are not within the scope of the agreement marked "Exhibit A" to the Complaint, and defendant at no time was granted any license thereunder by reason of said agreement marked "Exhibit A" to the Complaint.

## XV.

Further answering the Complaint, defendant, American Pipe and Construction Co., alleges that said patents Nos. [41] 2,168,329, 2,639,942, 2,639,943 and 2,681,725 and all the claims thereof are invalid in law in that:

(a) they do not disclose patentable inventions in view of the prior art existing at the time of the making of the alleged inventions disclosed therein;

(b) the inventions disclosed in said patents were fully anticipated by and were not patentable in view of the disclosures of prior United States and foreign patents and printed publications, the names, dates and numbers of which are not at this time known to defendant, but which defendant asks leave to insert herein by amendment when they are determined;

(c) the claims of said patents are vague and indefinite and do not define the alleged inventions of the patents in compliance with the statutory requirements of patent claims;

(d) the inventor named in each of said Letters Patent was not the first or any inventor of the things claimed as inventions in said patents;

(e) the said Letters Patent were improvidently and illegally granted by the United States Patent Office because the latter failed to locate or consider the prior art most pertinent to the disclosures of said patents;

(f) the claims of said patents are for unpatentable aggregations and not for patentable combinations;

(g) because of the proceedings had in the United States Patent Office during the prosecution of the applications which resulted in the issuance of said patents, the patentee is now estopped from contending for such a construction of said claims as would encompass any devices or machines which may have been manufactured, sold or used by defendant. [42]

## XVI.

Further answering the Complaint, defendant, American Pipe and Construction Co., alleges that said agreement of February 8, 1944, marked "Exhibit A" to the Complaint, terminated by operation of law on August 7, 1956, and is no longer of any force and effect.

## CROSS-COMPLAINT

Comes Now cross-complainant, American Pipe and Construction Co., and for cause of action against cross-defendant, Spencer A. Earnshaw, alleges as follows:

### I.

Cross-complainant, American Pipe and Construction Co., is a corporation duly organized and existing under and by virtue of the laws of the State of Delaware, and has a place of business at South Gate, County of Los Angeles, State of California.

### II.

Cross-defendant, Spencer A. Earnshaw, is an individual and a resident of Los Angeles, County of Los Angeles, State of California.

## III.

The Court has jurisdiction of this cross-complaint because the same is founded upon the patent laws of the United States concerning the scope and validity of Letters Patent of the United States owned by cross-defendant and the question of the validity and the infringement thereof by acts of the [43] cross-complainant. Jurisdiction is also conferred by Section 2201 of Title 28 of United States Code. Jurisdiction is also conferred by diversity of citizenship of the parties, and the amount in controversy is in excess of \$3000.00, exclusive of interest.

## IV.

That on or about February 8, 1944, cross-defendant did, by reason of an agreement in writing, grant certain licenses and privileges to cross-complainant under Letters Patent of the United States No. 2,168,329.

## V.

Cross-complainant has performed all of the terms, conditions and provisions to be performed by it under the terms of said agreement.

## VI.

Cross-complainant, its subsidiaries or assigns, did not at any time manufacture, sell or use any device or machine coming within the scope of said Letters Patent No. 2,168,329.

## VII.

Cross-defendant has charged that cross-complainant, its subsidiaries or assigns, has, during the ex-



istence of said agreement, either manufactured, sold or used devices or machines coming within the scope of said Letters Patent No. 2,168,329, and has demanded royalties from cross-complainant for such acts. [44]

#### VIII.

That said agreement of February 8, 1944, by its terms, terminated with the expiration of said Letters Patent No. 2,168,329, which expiration of the patent occurred on August 7, 1956.

#### IX.

That cross-complainant notified cross-defendant of said expiration of the agreement and the fact that minimum royalties would terminate because of the termination of said agreement.

#### X.

That cross-defendant has denied that said agreement terminated and is demanding further royalties or payments from cross-complainant allegedly under the terms of said agreement.

#### XI.

That the basis of said demand on the part of cross-defendant is that cross-defendant allegedly owns three United States patents identified as Nos. 2,639,942, 2,639,943 and 2,681,725, and charges that said patents were contemplated by said agreement of February 8, 1944 and that cross-complainant, its subsidiaries or assigns, has manufactured, sold or used devices or machines coming within the scope

of said patents and is, therefore, obligated under the terms of said agreement to pay to cross-defendant royalties thereon in accordance with the agreement of February 8, 1944, and that said agreement endures to the expiration date of the last expiring of said three Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725. [45]

## XII.

Cross-complainant alleges that said patents were not contemplated by said agreement of February 8, 1944, and that cross-complainant at no time was a licensee under said patents.

## XIII.

Cross-complainant alleges that cross-complainant, its subsidiaries or assigns, did not at any time manufacture, use or sell any devices or machines coming within the scope of said Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725 and has committed no acts of infringement thereof.

## XIV.

That therefore there is a justiciable controversy as between cross-complainant and cross-defendant as to:

(a) the termination of the license agreement of February 8, 1944;

(b) whether or not there were any royalties due to cross-defendant by cross-complainant because of the manufacture, sale or use by cross-complainant of any devices or machines coming within the scope of United States Letters Patent No. 2,168,329;

(c) whether or not Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725 were contemplated by and come within the scope of the agreement of February 8, 1944;

(d) whether or not cross-complainant has committed any acts of infringement of United States Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725;

(e) whether or not the claim of United States Letters Patents Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725 are valid. [46]

## XV.

Cross-complainant alleges that said United States Letters Patent Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725 are invalid in law in that:

(a) they do not disclose patentable inventions in view of the prior art existing at the time of the making of the alleged inventions disclosed therein;

(b) the inventions disclosed in said patents were fully anticipated by and were not patentable in view of the disclosures of prior United States and foreign patents and printed publications, the names, dates and numbers of which are not at this time known to cross-complainant, but which cross-complainant asks leave to insert herein by amendment when they are determined;

(c) the claims of said patents are vague and indefinite and do not define the alleged inventions of the patents in compliance with the statutory requirements of patent claims;



(d) the inventor named in each of said Letters Patent was not the first or any inventor of the things claimed as inventions in said patents;

(e) the said Letters Patent were improvidently and illegally granted by the United States Patent Office because the latter failed to locate or consider the prior art most pertinent to the disclosures of said patents;

(f) the claims of said patents are for unpatentable aggregations and not for patentable combinations;

(g) because of the proceedings had in the United States Patent Office during the prosecution of the applications which resulted in the issuance of said patents, the patentee is now estopped from contending for such a construction of said claims as would encompass any devices or machines which may have been manufactured and sold by cross-complainant.

Wherefore defendant-cross-complainant prays:

1. That plaintiff take nothing by his Complaint, and that the same be dismissed with costs and attorneys' fees to defendant.

2. For a declaratory judgment adjudging:

- (a) that cross-complainant, its subsidiaries and assigns, have not manufactured, sold or used any devices or machines coming within the scope of any claims of Letters Patent No. 2,168,329;

- (b) that Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725 were not contemplated by and were not included within the scope of the agreement of

February 8, 1944 between cross-complainant and cross-defendant;

(c) that the agreement of February 8, 1944 by and between cross-complainant and cross-defendant expired with the expiration of Letters Patent No. 2,168,329 on August 7, 1956, and was thereafter of no further force or effect;

(d) that cross-complainant, its subsidiaries and assigns, committed no acts of infringement of Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725;

(e) that Letters Patent Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725 are invalid and unenforceable in law.

(f) that cross-complainant be awarded its costs and disbursements incurred, together with reasonable attorneys' fees, in this action.

3. For such further and different relief as to the Court may seem meet and just.

AMERICAN PIPE AND  
CONSTRUCTION CO.,

/s/ By OSCAR A. MELLIN,  
One of its attorneys. [48]

Affidavit of Service by Mail Attached. [49]

[Endorsed]: Filed Oct. 4, 1956.

In the United States District Court, Southern  
District of California, Central Division

Civil Action No. 20040-Y

SPENCER A. EARNSHAW,                      Plaintiff,

vs.

AMERICAN PIPE AND CONSTRUCTION CO.,  
a corporation,                      Defendant.

AMERICAN PIPE AND CONSTRUCTION CO.,  
a corporation,                      Counterclaimant,

vs.

SPENCER A. EARNSHAW,  
Counterclaim Defendant.

DEFENDANT'S FIRST AMENDED ANSWER  
TO COMPLAINT AND DEFENDANT'S  
FIRST AMENDED COUNTERCLAIM

Comes now American Pipe and Construction Co.,  
defendant above named, and files this its first  
amended answer to complaint, pursuant to Rule  
15(a) of the Federal Rules of Civil Procedure, and  
in answer to the Complaint on file herein, admits,  
denies and alleges as follows: [61]

I.

Answering paragraph I of the Complaint, defend-  
ant, American Pipe and Construction Co., admits  
the allegations thereof.

## II.

Answering paragraph II of the Complaint, defendant, American Pipe and Construction Co., admits that alleged United States Letters Patent No. 2,168,329 issued on August 8, 1939; admits that defendant and plaintiff entered into a written agreement, a copy of which is attached to the Complaint and made a part thereof and marked "Exhibit A"; and except for those things expressly admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph II contained.

## III.

Answering paragraph III of the Complaint, defendant, American Pipe and Construction Co., admits that pursuant to the terms of said agreement "Exhibit A" to the Complaint, defendant paid to the plaintiff the sum of \$200.00; and except for those things expressly admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph III contained.

## IV.

Answering paragraph IV of the Complaint, defendant, American Pipe and Construction Co., admits that by the agreement marked "Exhibit A" to the Complaint, plaintiff granted to defendant certain licenses, as is expressly provided by said agreement marked "Exhibit A"; and except for those things expressly admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph IV [62] contained.

## V.

Answering paragraph V of the Complaint, defendant, American Pipe and Construction Co., admits that on or about July 28, 1944, defendant, in writing, exercised an option set out and specified in the agreement marked "Exhibit A" attached to the Complaint, and that a copy of said writing is attached to the Complaint and made a part thereof and marked "Exhibit B"; and except for those things expressly admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph V contained.

## VI.

Answering paragraph VI of the Complaint, defendant, American Pipe and Construction Co., admits that said agreement marked "Exhibit A" and attached to the Complaint provided for royalty payments to plaintiff as set forth in paragraph (6) of said agreement marked "Exhibit A" and attached to the Complaint; defendant alleges that plaintiff's patent No. 2,168,329 expired at the end of the day of August 7, 1956; and except for those matters expressly admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph VI contained.

## VII.

Answering paragraph VII of the Complaint, defendant, American Pipe and Construction Co., admits that the agreement marked "Exhibit A" to the Complaint in paragraph (13) provides as follows:

"In the event American exercises its option, then



in that event, American agrees during the life of this agreement to diligently promote and [63] endeavor to sell pipe made in accordance with the processes and methods of Patent No. 2,168,329, and in the event American fails so to do this License Agreement will be null and void and the same will be cancelled by mutual consent written thereon."

Defendant admits that the agreement marked "Exhibit A" to the Complaint was modified by changing the royalty mentioned therein from one-fifth ( $1/5$ th) of one cent (1c) per square foot, to two-fifths ( $2/5$ ths) of one cent (1c) per square foot, and to increase the minimum royalty specified in paragraph (9) of said agreement from \$25.00 per month to \$50.00 per month, the increase in royalty to become effective as of March 1, 1951, but defendant, American Pipe and Construction Co., alleges that said changes in said agreement were made without consideration passing to defendant, American Pipe and Construction Co.

Defendant, American Pipe and Construction Co., further admits that said agreement marked "Exhibit A" to the Complaint provides in paragraph (11) thereof as follows:

"If either American or Earnshaw invents any improvements to the processes and methods of Patent No. 2,168,329 which, in the judgment of American are applicable to the manufacture, or lining, or coating of pipe, the said improvements shall inure to the benefit of both parties, on the terms herein set forth, and American will pay the costs of patenting the same."



Defendant, American Pipe and Construction Co., specifically denies that plaintiff invented and received patents on improvements to the processes and methods of said patent No. 2,168,329; defendant further specifically denies that it has had the use and benefit of any inventions or improvements, patented, unpatented or [64] otherwise, belonging to plaintiff; and except for those things specifically admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph VII contained.

### VIII.

Answering paragraph VIII of the Complaint, defendant, American Pipe and Construction Co., admits that it has not paid royalties to plaintiff other than the minimum royalties as provided for in said agreement. Defendant specifically denies that it has continuously, or otherwise, coated and/or lined and applied to the inside or outside of pipe of material manufactured by defendant and its subsidiaries and/or assigns, and is still coating and lining the same, by any process or apparatus coming within the scope of any patents owned or controlled by plaintiff, including patents Nos. 2,168,329, 2,639,943, 2,681,725 and 2,639,942.

Defendant, American Pipe and Construction Co., further specifically denies that there is now due, owing and unpaid to plaintiff for royalties under said agreement the sum of \$125,000.00, or any sum.

Except for those matters specifically admitted or denied herein, defendant, both generally and

specifically, denies each and every allegation in paragraph VIII contained.

### IX.

Answering paragraph IX of the Complaint, defendant, American Pipe and Construction Co., admits that the agreement marked "Exhibit A" to the Complaint provides in paragraph (10) thereof as follows:

"During the life of this agreement, Earnshaw or his accredited representative will have the right to examine the books and accounts of American, [65] at reasonable hours, in order to check the calculation of royalties due Earnshaw hereunder."

Except for those matters specifically admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph IX contained.

### X.

Answering paragraph X of the Complaint, defendant, American Pipe and Construction Co., admits that it has not paid royalties under the terms of the agreement marked "Exhibit A" to the Complaint, other than the minimum royalty provided for thereby for the reason that defendant has not manufactured, sold or used any of the things alleged to be patented in and by patent No. 2,168,329; and except for those matters and things specifically admitted or denied herein, defendant, both generally and specifically, denies each and every allegation in paragraph X contained.

## XI.

For further answer to the Complaint, defendant, American Pipe and Construction Co., alleges that it has performed all of the terms, conditions and provisions to be performed by it under the terms of said agreement marked "Exhibit A" to the Complaint.

## XII.

Defendant, American Pipe and Construction Co., alleges that at no time has it, its subsidiaries or assigns, or anyone acting for it or them, manufactured, sold or used any device or machine coming within the scope of any of the claims of Letters Patent No. 2,168,329.

## XIII.

Further answering the Complaint, defendant, American Pipe and Construction Co., alleges that at no time has it, its subsidiaries or assigns, or anyone acting for them, manufactured, sold or used any device coming within the scope of any of the claims of plaintiff's alleged patents on alleged improvements to the processes and methods of patent No. 2,168,329, which patents are identified as patents Nos. 2,639,942, 2,639,943 and 2,681,725; and defendant further alleges that said three patents last identified are not patents on improvements to the processes and methods of said patent No. 2,168,329.

## XIV.

Further answering the Complaint, defendant, American Pipe and Construction Co., alleges that plaintiff's alleged patents Nos. 2,639,942, 2,639,943

and 2,681,725 are not within the scope of the agreement marked "Exhibit A" to the Complaint, and defendant at no time was granted any license thereunder by reason of said agreement marked "Exhibit A" to the Complaint.

## XV.

Further answering the Complaint, defendant, American Pipe and Construction Co., alleges that said patents Nos. 2,639,942, 2,639,943 and 2,681,725 and all the claims thereof are invalid in law in that:

(a) They do not disclose patentable inventions in view of the prior art existing at the time of the making of the alleged inventions disclosed therein;

(b) The inventions disclosed in said patents were fully anticipated by and were not patentable in view of the disclosures of prior United States and foreign patents and printed publications, the names, dates and numbers of which are not at this time known to defendant, but which defendant asks leave to insert herein by amendment when they are determined; [67]

(c) The claims of said patents are vague and indefinite and do not define the alleged inventions of the patents in compliance with the statutory requirements of patent claims;

(d) The inventor named in each of said Letters Patent was not the first or any inventor of the things claimed as inventions in said patents;

(e) The said Letters Patent were improvidently and illegally granted by the United States Patent



Office because the latter failed to locate or consider the prior art most pertinent to the disclosures of said patents;

(f) The claims of said patents are for unpatentable aggregations and not for patentable combinations;

(g) Because of the proceedings had in the United States Patent Office during the prosecution of the applications which resulted in the issuance of said patents, the patentee is now estopped from contending for such a construction of said claims as would encompass any devices or machines which may have been manufactured, sold or used by defendant.

## XVI.

Because of the state of the art as shown by prior United States Letters Patent, prior published patents in foreign countries, and in prior publications in the United States and foreign countries, all antedating said Letters Patent Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725, and because of the estoppel by the proceedings had in the United States Patent Office during the prosecution of the applications eventuating into said Letters Patent Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725, the claims of said Letters Patent Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725 cannot be construed to be of a scope sufficient to include any device or apparatus or process made, used, sold or practiced by defendant, American Pipe and Construction Co. [68]

## XVII.

Further answering the Complaint, defendant American Pipe and Construction Co., alleges that said agreement of February 8, 1944, marked "Exhibit A" to the Complaint, terminated by operation of law on August 7, 1956, and is no longer of any force or effect.

## COUNTERCLAIM

Comes now counterclaimant, American Pipe and Construction Co., and files this its first amended counterclaim pursuant to Rule 15(a) of the Federal Rules of Civil Procedure, and for cause of action against counterclaim defendant, Spencer A. Earnshaw, alleges as follows:

## I.

Counterclaimant, American Pipe and Construction Co., is a corporation duly organized and existing under and by virtue of the laws of the State of Delaware, and has a place of business at South Gate, County of Los Angeles, State of California.

## II.

Counterclaim defendant, Spencer A. Earnshaw, is an individual and a resident of Los Angeles, County of Los Angeles, State of California.

## III.

The Court has jurisdiction of this counterclaim because the same is founded upon the patent laws of the United States concerning the scope and validity of Letters Patent of the United States owned



by counterclaim defendant and the question of the validity and the infringement thereof by acts of the [69] counterclaimant. Jurisdiction is also conferred by Section 2201 of Title 28 of United States Code. Jurisdiction is also conferred by diversity of citizenship of the parties, and the amount in controversy is in excess of \$3,000.00, exclusive of interest.

#### IV.

That on or about February 8, 1944, counterclaim defendant did, by reason of an agreement in writing, grant certain licenses and privileges to counterclaimant under Letters Patent of the United States No. 2,168,329.

#### V.

Counterclaimant has performed all of the terms, conditions and provisions to be performed by it under the terms of said agreement.

#### VI.

Counterclaimant, its subsidiaries or assigns, did not at any time manufacture, sell or use any device or machine coming within the scope of said Letters Patent No. 2,168,329.

#### VII.

Counterclaim defendant has charged that counterclaimant, its subsidiaries or assigns, has, during the existence of said agreement, either manufactured, sold or used devices or machines coming within the scope of said Letters Patent No. 2,168,329, and has demanded royalties from counterclaimant for such acts.

## VIII.

That said agreement of February 8, 1944, by its terms, terminated with the expiration of said Letters Patent No. 2,168,329, which expiration of the patent occurred on August 7, 1956. [70]

## IX.

That counterclaimant notified counterclaim defendant of said expiration of the agreement and the fact that minimum royalties would terminate because of the termination of said agreement.

## X.

That counterclaim defendant has denied that said agreement terminated and is demanding further royalties or payments from counterclaimant allegedly under the terms of said agreement.

## XI.

That the basis of said demand on the part of counterclaim defendant is that counterclaim defendant allegedly owns three United States patents identified as Nos. 2,639,942, 2,639,943 and 2,681,725, and charges that said patents were contemplated by said agreement of February 8, 1944 and that counterclaimant, its subsidiaries or assigns, has manufactured, sold or used devices or machines coming within the scope of said patents and is, therefore, obligated under the terms of said agreement to pay to counterclaim defendant royalties thereon in accordance with the agreement of February 8, 1944, and that said agreement endures to the expiration date of the last expiring of said three

Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725.

## XII.

Counterclaimant alleges that said patents were not contemplated by said agreement of February 8, 1944, and that counterclaimant at no time was a licensee under said patents.

## XIII.

Counterclaimant alleges that counterclaimant, its subsidiaries or assigns, did not at any time manufacture, use or sell [71] any devices or machines coming within the scope of said Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725 and has committed no acts of infringement thereof.

## XIV.

That therefore there is a justiciable controversy as between counterclaimant and counterclaim defendant as to:

(a) The termination of the license agreement of February 8, 1944;

(b) Whether or not there were any royalties due to counterclaim defendant by counterclaimant because of the manufacture, sale or use by counterclaimant of any devices or machines coming within the scope of United States Letters Patent No. 2,168,329;

(c) Whether or not Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725 were contemplated by and come within the scope of the agreement of February 8, 1944;

(d) Whether or not counterclaimant has committed any acts of infringement of United States Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725;

(e) Whether or not the claims of United States Letters Patents Nos. 2,639,942, 2,639,943 and 2,681,725 are valid.

### XV.

Counterclaimant alleges that said United States Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725 are invalid in law in that:

(a) They do not disclose patentable inventions in view of the prior art existing at the time of the making of the alleged inventions disclosed therein;

(b) The inventions disclosed in said patents were fully anticipated by and were not patentable in view of the disclosures [72] of prior United States and foreign patents and printed publications, the names, dates and numbers of which are not at this time known to counterclaimant, but which counterclaimant asks leave to insert herein by amendment when they are determined;

(c) The claims of said patents are vague and indefinite and do not define the alleged inventions of the patents in compliance with the statutory requirements of patent claims;

(d) The inventor named in each of said Letters Patent was not the first or any inventor of the things claimed as inventions in said patents;

(e) The said Letters Patent were improvidently

and illegally granted by the United States Patent Office because the latter failed to locate or consider the prior art most pertinent to the disclosures of said patents;

(f) The claims of said patents are for unpatentable aggregations and not for patentable combinations;

(g) Because of the proceedings had in the United States Patent Office during the prosecution of the applications which resulted in the issuance of said patents, the patentee is now estopped from contending for such a construction of said claims as would encompass any devices or machines which may have been manufactured and sold by counterclaimant.

## XVI.

Because of the state of the art as shown by prior United States Letters Patent, prior published patents in foreign countries, and in prior publications in the United States and foreign countries, all antedating said Letters Patent Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725, and because of estoppel by the proceedings had in the United States Patent Office during the prosecution of the applications eventuating into said Letters Patent Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725, the claims of said [73] Letters Patent Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725 cannot be construed to be of a scope sufficient to include any device or apparatus or process made, used, sold or practiced by defendant-counterclaimant, American Pipe and Construction Co.



Wherefore, defendant-counterclaimant prays:

1. That plaintiff take nothing by his Complaint, and that the same be dismissed with costs and attorneys' fees to defendant.

2. For a declaratory judgment adjudging:

(a) That counterclaimant, its subsidiaries and assigns, have not manufactured, sold or used any devices or machines coming within the scope of any claims of Letters Patent No. 2,168,329;

(b) That Letters Patent Nos. 2,639,942, 2,639,943, and 2,681,725 were not contemplated by and were not included within the scope of the agreement of February 8, 1944, between counterclaimant and counterclaim defendant;

(c) That the agreement of February 8, 1944, by and between counterclaimant and counterclaim defendant expired with the expiration of Letters Patent No. 2,168,329 on August 7, 1956, and was thereafter of no further force or effect;

(d) That counterclaimant, its subsidiaries and assigns, committed no acts of infringement of Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725;

(e) That Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725, are invalid and unenforceable in law.

(f) That counterclaimant be awarded its costs and disbursements incurred, together with reasonable attorney's fees, in this action. [74]



3. For such further and different relief as to the Court may seem meet and just.

AMERICAN PIPE &  
CONSTRUCTION CO.,

/s/ By OSCAR A. MELLIN,  
One of its Attorneys. [75]

Acknowledgment of Service Attached. [76]

[Endorsed]: Filed Oct. 30, 1956.

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[Title of District Court and Cause.]

ANSWER TO FIRST AMENDED  
COUNTERCLAIM

Comes now counterclaim defendant, Spencer A. Earnshaw, and answering the amended counterclaim of Counterclaimant, American Pipe and Construction Co., admits, denies and alleges:

I.

Admits Paragraphs I, II, III and IV of said counterclaim.

II.

Denies generally and specifically Paragraphs V and VI of said counterclaim. [90]

III.

Admits paragraph VII.

IV.

Denies generally and specifically paragraph VIII.

V.

Admits paragraphs IX, X and XI.

VI.

Denies generally and specifically paragraphs XII and XIII.

VII.

Denies generally and specifically paragraph XIV except admits that he claims that the license agreement of February 8, 1954 had not terminated.

VIII.

Denies generally and specifically paragraphs XV and XVI of said amended counterclaim.

Now as a Further Defense to the Matters and Things set Forth in the First Amended Counterclaim, counterclaim defendant alleges:

I.

That said counterclaim fails to set out facts sufficient to establish a counterclaim, upon which counterclaim counterclaimant is entitled to relief as required by Rule 8(a) of the Federal Rules of Civil Procedure.

Now for a Further and Separate Defense to the Matters and Things Set Forth in the First Amended Counterclaim, counterclaim defendant alleges:

I.

That the complaint is for money due for royalties under a written contract and for an accounting. That said counterclaim has no place in this action, as the decision of the issues raised by the complaint and first amended answer will determine all issues

[91] and the amended counterclaim will not determine any matter that cannot be determined within the issues framed by the complaint and amended answer.

Now for a Further and Separate Defense to the Matters and Things Set Forth in the First Amended Counterclaim, counterdefendant alleges:

I.

That countercomplainant is a licensee and as a licensee of the patent in question is estopped to deny the validity of the patent or the three improved patents referred to as "subsequent patents" for the reason that under the agreement sued on paragraph 11 provides:

"If either American or Earnshaw invents any improvements to the processes and methods of patent No. 2168329 which, in the judgment of American are applicable to the manufacture, or lining, or coating of pipe, the said improvements shall inure to the benefit of both parties, on the terms herein set forth, and American will pay the costs of patenting the same.",

and therefore the "subsequent patents" are included in and are part of said agreement sued on.

Wherefore, counterclaim-defendant prays that counterclaimant take nothing by its amended counterclaim; that said counterclaim be dismissed; that said counterclaim defendant have judgment on the original complaint as prayed for, including costs of

suit and any other relief to which he may be entitled.

/s/ J. MARION WRIGHT,  
 Attorney for Plaintiff and Counter-  
 claim Defendant. [92]

Acknowledgment of Service Attached. [93]

Duly Verified. [94]

[Endorsed]: Filed Dec. 17, 1956.

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[Title of District Court and Cause.]

### NOTICE UNDER RULE 35 U.S.C. 282

Plaintiff and counterclaim defendant, Spencer A. Earnshaw, and his counsel, will please take notice that defendant and counterclaimant will rely upon the following patents and publications:

(a) as showing lack of invention;

(b) as anticipation of the plaintiff and counterclaim defendant's patents in suit; [99]

(c) as showing the limits of the patent monopoly granted by the plaintiff and counterclaim defendant's patents in suit;

(d) as showing the state of the art; and

(e) as showing prior invention, knowledge, use, or offer for sale:

#### United States Patents

Inventor	Number	Date
W. R. Brend	2,380,499	July 31, 1945
W. R. Brend	2,368,742	February 6, 1945
Willoughby	21,102	1858
Hoopes	2,383,194	1945

## United States Patents—(Continued)

Barker	2,451,603	1948
Riedel	250,976	1881
Hamill	2,530,767	1950
Devlin	2,567,699	1951
Wilson	2,603,383	1952
Lindquist	2,697,402	1954
Clow	15,280	1856
Colburn	2,550,781	1951
Rerick	2,554,637	1951

Prior Uses, Prior Knowledge, Prior Invention  
Name and Address

Lock Joint Pipe Company, 150 Rutledge Avenue,  
East Orange, New Jersey.

American Pipe and Construction Co., P. O. Box  
3428 Terminal Annex, Los Angeles 54, California.

Fred F. Jenkins, c/o American Pipe and Con-  
struction Co., P. O. Box 3428 Terminal Annex, Los  
Angeles 54, California. [100]

Adolf G. Butler, c/o American Pipe and Con-  
struction Co., P. O. Box 3428 Terminal Annex, Los  
Angeles 54, California.

N. Johnson, c/o American Pipe and Construction  
Co., P. O. Box 3428 Terminal Annex, Los Angeles  
54, California.

H. F. Kennison, c/o Lock Joint Pipe Company,  
150 Rutledge Avenue, East Orange, New Jersey.



J. E. Longley, c/o Lock Joint Pipe Company, 150  
Rutledge Avenue, East Orange, New Jersey.

Certificate of Service

The undersigned certified that on the 21st day of February, 1957, a copy of the foregoing Notice Under Rule 35 U.S.C. 282 was mailed to J. Marion Wright, attorney for plaintiff and counterclaim defendant, at his address of record.

HILL, FARRER & BURRILL,  
MELLIN, HANSCOM & HURSH,  
OSCAR A. MELLIN,

/s/ By FRANK D. MacDOWELL,  
Attorneys for Defendant and Counterclaimant. [101]

[Endorsed]: Filed Feb. 21, 1957.

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[Title of District Court and Cause.]

NOTICE OF FILING DEPOSITION

To the Plaintiff Above Named and to J. Marion Wright, His Attorney:

You and Each of You Will Please Take Notice that the deposition of Spencer A. Earnshaw, heretofore taken on behalf of defendant American Pipe and Construction Co. in the above entitled action, was filed with the Clerk of the Court on March 22, 1957, and that the deposition of Hugh F. Kennison,



taken on behalf of said defendant, has also been filed.

Dated: March 23, 1957.

HILL, FARRER & BURRILL,  
MELLIN, HANSCOM & HURSH,  
OSCAR A. MELLIN,

/s/ By FRANK D. MacDOWELL,  
Attorneys for Defendant. [102]

Affidavit of Service by Mail Attached.

[Endorsed]: Filed Mar. 25, 1957.

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[Title of District Court and Cause.]

### DECISION

The above entitled cause heretofore tried, argued and submitted, is now decided as follows:

Judgment will be for the defendant that plaintiff take nothing by the Complaint. And Judgment will be for the plaintiff that the defendant take nothing by the counterclaim.

Costs to the defendant.

Findings and Judgment to be prepared by defendant under Local Rule 7. [104]

### Comment

The action originated in the Superior Court of the State of California as an action to recover money alleged to be due as royalties under a license agreement dated February 28, 1944, relating to Patent No. 2168329, issued August 8, 1939, to plain-

tiff Earnshaw. It was removed to this Court by reason of diversity. In this Court, the defendant counterclaimed by challenging the validity of subsequent patents to Earnshaw numbered, 2639942, filed November 5, 1948, 2639943, filed April 30, 1948, and 2681725, filed June 20, 1949.

The main question is whether the defendant used in its operations the improvements brought to the art in any of the three subsequent Earnshaw patents. The license agreement provided:

“(11) If either American or Earnshaw invents any improvements to the processes and methods of Patent No. 2168329 which, in the judgment of American are applicable to the manufacture, or lining, or coating of pipe, the said improvements shall inure to the benefit of both parties, on the terms herein set forth, and American will pay the costs of patenting the same.

“(12) It is understood by both parties hereto that American is now using a brush coating machine for the coating of pipe and a centrifugal process for lining pipe, and it is further understood that American is at liberty to continue to use the said processes and/or the processes and methods of Patent No. 2168329 at its option. Improvements or patents applicable to the said brush coating machine and/or centrifugal lining process are [105] expressly excluded from the provisions of Paragraph 11 hereof. The improvements and additional patents referred to in Paragraph 11 shall include only such improvements and patents as refer to and

are applicable to Patent No. 2168329; a belt lining machine." (Emphasis added.)

The evidence in the case shows clearly that at the time of the execution of the license agreement, the defendant was using the Brend patent No. 2380499, which is described in Paragraph 12 as a brush coating machine "for the coating of pipe". Since acquiring the license under the first Earnshaw patent, they have continued to use the Brend machine. As a fact, they have not used the Earnshaw patented machine, but have paid him the minimum royalty under the license. Some time prior to August 15, 1946, the defendants caused to be designed for them by Lock Joint Pipe Company of East Orange, N. J., a device which would substitute rubber for the bristles in the Brend double brush coating machine. This date antedates the earliest dates appearing on the Earnshaw "improvement" patents. The substitution of rubber for bristles was then made on the Brend machines which the defendants were using. So, regardless of any theoretical question of whether the substitution of rubber instead of bristles constituted a "patentable improvement" or an "improvement" under the license agreement, and regardless of the question whether the substitution of one such element in a device would constitute invention over the prior art, so as to be anticipation if used before the patent issued, or infringement if used after, the uncontradicted fact remains that the license agreement between the parties specifically excluded improvements on the device which they

[106] were then using and which conformed to the teachings of the Brend patent.

So the upshot of the matter is this: By his own contract the plaintiff has limited his right to "improvements" on his own machine. His machine was never used by the defendants, they merely paying him the minimum royalty. The change in brushes was made not on his, but on the Brend machine, an "improvement," if it be such, which was specifically excluded from the license agreement. The idea for the substitution of rubber came to the defendant from another source long before the disclosures made in the Earnshaw applications for patent. So the plaintiff is not entitled to royalties for the substitution of something which not only did not originate with him, but which was never applied to his device.

By the same token, the use of rubber brushes in this type of machine does not seem to be disclosed in the prior art. And the Earnshaw patents 2639942, 2639943 and 2681725 have additional elements of originality. So we conclude that on the subject of invalidity, the defendant has not met the burden of proof and that the Earnshaw patents referred to are invention over the prior art.

Hence the ruling above made.

Dated this 2nd day of April, 1957.

/s/ LEON R. YANKWICH,  
Chief U. S. District Judge. [107]

[Endorsed]: Filed April 2, 1957.

[Title of District Court and Cause.]

## FINDINGS OF FACT AND CONCLUSIONS OF LAW

Pursuant to Rule 52 of the Federal Rules of Civil Procedure and Rule 7 of the Rules of Practice of the District Court of the United States for the Southern District of California, the Court makes the following Findings of Fact and Conclusions of law: [108]

### Findings of Fact

1.

That Plaintiff, Spencer A. Earnshaw, is a resident of Los Angeles, County of Los Angeles, State of California.

2.

That Defendant, American Pipe and Construction Co., is a corporation of Delaware, and has a place of business at South Gate, County of Los Angeles, State of California.

3.

That Plaintiff, Spencer A. Earnshaw, and Defendant, American Pipe and Construction Co., entered into a written agreement dated February 8, 1944, by the terms of which Defendant, American Pipe and Construction Co., was granted a license under Plaintiff's United States Letters Patent No. 2,168,329.

4.

That prior to February 8, 1944 Defendant, American Pipe and Construction Co., had manufactured and was commercially using at its plant in South



Gate, California, a pipe coating machine of the double brush type known as the "Brend" machine, which machine in construction and mode of operation is the same as that illustrated and described in United States Letters Patent No. 2,380,499 to Brend.

## 5.

That prior to February 8, 1944 Defendant, American Pipe and Construction Co., informed Plaintiff, Spencer A. Earnshaw, [109] that it was employing the "Brend" machine and displayed said machine to him; and that said machine is the machine referred to in paragraph (12) of the agreement of February 8, 1944 as "a brush coating machine for the coating of pipe".

## 6.

That Defendant, American Pipe and Construction Co., continuously employed said "Brend" machine since prior to February 8, 1944, and has not manufactured, sold or used any machine such as illustrated, described and claimed in Plaintiff's Patent No. 2,168,329.

## 7.

That during the year 1946 Lock Joint Pipe Company, of New Jersey, at their plant at East Orange, New Jersey, caused to be designed and manufactured brushes for the "Brend" machine having an outer periphery of rubber, which rubber outer periphery was ribbed longitudinally.

## 8.

That during the year 1946 said Lock Joint Pipe Company installed such rubber brushes in a



“Brend” machine in lieu of wire brushes and successfully coated pipe with such “Brend” machine so fitted with rubber brushes.

## 9.

That Lock Joint Pipe Company, prior to the year 1948, fully informed Defendant, American Pipe and Construction Co., of its said use of rubber brushes in a “Brend” machine. [110]

## 10.

That prior to the month of April 1948 Defendant, American Pipe and Construction Co., constructed brushes for its “Brend” machine which substituted a rubber outer peripheral surface for bristles, and employed said rubber brushes in its “Brend” machine.

## 11.

That the substitution of rubber brushes for bristle brushes in the “Brend” machine was done by Defendant, American Pipe and Construction Co., entirely independently of Plaintiff, Spencer A. Earnshaw, and without any knowledge of any similar ideas that Plaintiff, Spencer A. Earnshaw, may have had upon the substitution of rubber brushes for bristle brushes in pipe coating machines and prior to any disclosure of any of such ideas by Plaintiff, Spencer A. Earnshaw, to Defendant, American Pipe and Construction Co.

## 12.

That the substitution of rubber brushes for bristle brushes in the “Brend” machine did not originate with Plaintiff, Spencer A. Earnshaw, but came

to Defendant, American Pipe and Construction Co., from Lock Joint Pipe Company long before Plaintiff, Spencer A. Earnshaw, made any disclosure thereof to Defendant, American Pipe and Construction Co.

## 13.

That the substitution of rubber brushes for bristle brushes in the "Brend" machine, if it constituted an improvement, was an improvement to the "Brend" machine and not to the machine [111] of Plaintiff's patent No. 2,168,329.

## 14.

That Defendant, American Pipe and Construction Co., has not used in its operations any novel features brought to the art in any of Plaintiff's three subsequent patents Nos. 2,639,942, 2,639,943 and 2,681,725; and is, therefore, not liable to Plaintiff for royalties for such use.

## Conclusions of Law

## 1.

That this Court has jurisdiction of the action and the parties.

## 2.

That Defendant, American Pipe and Construction Co., fully and entirely performed each and every of the obligations on its part to be performed under the agreement of February 8, 1944.

## 3.

That the "improvements" referred to in paragraph (11) of the agreement of February 8, 1944 are limited to "improvements" on the machine dis-

closed in Plaintiff's Letters Patent No. 2,168,329, and that the changes, alterations, additions or improvements made to the "Brend" machine by Defendant, American Pipe and Construction Co., are not such "improvements" as are contemplated by paragraph (11) of the agreement of February 8, 1944.

## 4.

That Plaintiff is not entitled to any royalties from [112] Defendant, American Pipe and Construction Co., in addition to those minimum royalties already paid to Plaintiff, Spencer A. Earnshaw, by Defendant, American Pipe and Construction Co.

## 5.

That the agreement of February 8, 1944 terminated with the expiration of Letters Patent No. 2,168,329.

## 6.

That Defendant, American Pipe and Construction Co., failed to sustain the burden of proving Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725 to be invalid.

Los Angeles, California, Dated: April 22, 1957.

/s/ LEON R. YANKWICH,  
United States District Judge.

Approved as to form 4-16-57, 11:25 a.m.

/s/ J. MARION WRIGHT,  
Attorney for Plaintiff. [113]

Acknowledgment of Service Attached, [114]

[Endorsed]: Lodged Apr. 16, 1957. Filed Apr. 22, 1957.

In the United States District Court, Southern  
District of California, Central Division

Civil Action No. 20040-Y

SPENCER A. EARNSHAW,                      Plaintiff,

vs.

AMERICAN PIPE AND CONSTRUCTION CO.,  
a corporation,                      Defendant.

AMERICAN PIPE AND CONSTRUCTION CO.,  
a corporation,                      Counterclaimant,

vs.

SPENCER A. EARNSHAW,  
Counterclaim Defendant.

### JUDGMENT

This cause having come on to be heard upon the  
issues raised by the Complaint and the Counter-  
claim, and the Court having filed its Findings of  
Fact and Conclusions of Law

It Is Ordered, Adjudged and Decreed: [115]

#### I.

That Plaintiff, Spencer A. Earnshaw, is a resi-  
dent of Los Angeles, County of Los Angeles, State  
of California.

#### II.

That Defendant, American Pipe and Construc-  
tion Co., is a corporation of Delaware.

III.

That this Court has jurisdiction of this action and of the parties.

IV.

That Plaintiff, Spencer A. Earnshaw, take nothing by the complaint and the same is hereby dismissed.

V.

That Defendant, American Pipe and Construction Co., take nothing by its Counterclaim and the same is hereby dismissed.

VI.

That Defendant, American Pipe and Construction Co., recover its costs and disbursements in this action in the amount of \$176.75, taxed 4/26/57, and have execution therefor.

Dated: this 22nd day of April, 1957.

/s/ LEON R. YANKWICH,  
United States District Judge.

Approved as to form: 4-16-57, 11:25 a.m.

/s/ J. MARION WRIGHT,  
Attorney for Plaintiff. [116]

Acknowledgment of Service Attached. [117]

[Endorsed]: Lodged April 16, 1957. Filed, Docketed and Entered Apr. 22, 1957.



[Title of District Court and Cause.]

MOTION TO MODIFY THE FINDINGS OF  
FACT BY STRIKING THEREFROM PAR-  
AGRAPH 14

Comes now Plaintiff and Counterclaim Defendant Spencer A. Earnshaw and moves this Court, Honorable Leon R. Yankwich presiding, to modify the Findings heretofore filed by the Court by striking therefrom paragraph 14.

Said motion will be made upon the grounds that the said finding of fact is not proper and is not sustained by the Court's decision, and that said plaintiff inadvertently overlooked and failed to object to that particular finding, and will be based upon the Findings of Fact, the decision of the Court and the [118] pleadings in the case, and upon the Affidavit of J. Marion Wright.

J. MARION WRIGHT AND  
J. CALVIN BROWN,

/s/ By J. MARION WRIGHT,  
Attorneys for Plaintiff and Counter-  
claim Defendant.

Authority on Motion

The Decision of this Court and Local Rule of the  
United States District Court No. 7. [119]

[Endorsed]: Filed May 17, 1957.



[Title of District Court and Cause.]

AFFIDAVIT OF J. MARION WRIGHT

State of California,

County of Los Angeles—ss.

J. Marion Wright, being first duly sworn, says that he is one of the attorneys for the plaintiff and counterclaim defendant, Spencer A. Earnshaw.

That affiant failed to appreciate the implications of paragraph 14 of the Findings of Fact when he approved same as to form, and that the overlooking of this particular finding was by accident and inadvertence, and therefore affiant desires that the [120] Findings be corrected to conform to the Court's Decision, and that the paragraph sought to be struck from the Findings is surplusage and purely volunteered and was not an issue in the trial.

/s/ J. MARION WRIGHT.

Subscribed and sworn to before me this 17th day of May, 1957.

[Seal] /s/ E. L. RUE,

Notary Public in and for said County and State.

My Commission Expires Dec. 21, 1957. [121]

[Endorsed]: Filed May 17, 1957.

[Title of District Court and Cause.]

AFFIDAVIT OF ROBERT V. EDWARDS IN  
OPPOSITION TO MOTION TO MODIFY  
FINDINGS OF FACT

State of California,  
County of Los Angeles—ss.

Robert V. Edwards, being first duly sworn, deposes and says:

1. I reside at 845 Canterbury Road, San Marino, California. I am an officer, to-wit: President, of American Pipe and Construction Co., a corporation, the defendant and counterclaimant in the above entitled action, and have held said office since sometime prior to the filing of said action. In such capacity I am familiar with the issues in said action. [122]

2. Mr. Hamer H. Jamieson, an attorney, whose office is at 510 South Spring Street, Los Angeles, California, called upon me at my home on May 15, 1957, at about 6:00 P.M. I have known Jamieson for several years, although I am not now and have never been well acquainted with him.

3. On said occasion said Jamieson stated to me that Spencer H. Earnshaw, the plaintiff in the above entitled action, had recently come to him and had requested that he accept the employment of representing said Earnshaw in an appeal from the judgment entered in the above entitled cause.

4. On said occasion at my home said Jamieson

further stated to me that said Earnshaw had handed him a large file of papers and documents in the above entitled matter, and that after a quick perusal of the same, he had stated to Earnshaw that it was his opinion that the case had been correctly decided by the Court upon the issue before it, namely, the question as to whether or not the defendant owed Earnshaw any royalties.

5. On said occasion at my home said Jamieson further stated to me that it was his opinion that if Earnshaw had any case at all against American Pipe and Construction Co. arising out of the patents involved in the within action, it was an action for infringement of said patents; that in his opinion the within action should have been brought for infringement rather than for royalties under the license agreement; and that American Pipe and Construction Co. should resurvey its position with respect to infringement of Earnshaw's said patents. I replied that I would take this matter up with our attorneys but that it is my understanding that the issue of any infringement by American Pipe and Construction Co. of said patents has been raised and disposed of in the within action.

6. Said Jamieson then and there stated to me that Earnshaw was trying to find an attorney to represent him, but that he, Jamieson, would not represent Earnshaw until the judgment herein [123] has become final by lapse of the time to appeal, and that he would then represent Earnshaw only in the event I would state to him that Ameri-

can Pipe and Construction Co. would be interested in disposing of the entire controversy over infringement of Earnshaw's said patents on a settlement basis. Finally, he then and there stated that if he could serve Earnshaw and American Pipe and Construction Co. in arriving at such a settlement, he would be glad to do so.

/s/ ROBERT V. EDWARDS.

Subscribed and Sworn to before me this 20th day of May, 1957.

[Seal]      /s/ MARGARET HIATT,

Notary Public in and for the County of Los Angeles, State of California. My Commission Expires Oct. 13, 1960. [124]

Acknowledgment of Service Attached. [125]

[Endorsed]: Filed May 20, 1957.

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[Title of District Court and Cause.]

### NOTICE OF APPEAL

Comes Now American Pipe and Construction Co., a corporation, the defendant-counterclaimant above named, and respectfully appeals to the United States Court of Appeals for the Ninth Circuit from the judgment entered April 22, 1957 in the above identified action, specifically from that part of said judgment dismissing the counterclaim and denying

the defendant-counterclaimant the relief prayed for in the counterclaim. [126]

Respectfully submitted,

AMERICAN PIPE AND  
CONSTRUCTION CO.,  
Defendant and Counterclaimant.  
HILL, FARRER & BURRILL,  
/s/ By OSCAR A. MELLIN,  
Its Attorneys. [127]

[Endorsed]: Filed May 22, 1957.

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[Title of District Court and Cause.]

#### CERTIFICATE BY CLERK

I, John A. Childress, Clerk of the above-entitled court, hereby certify that the items listed below constitute the transcript of record on appeal to the United States Court of Appeals for the Ninth Circuit, in the above-entitled cause:

A. The foregoing pages numbered 1 to 138, inclusive, containing the original

Petition for Removal (including summons, complaint & stipulation);

Notice of Filing Petition for Removal (including summons, complaint);

Defendant's Answer to Complaint & Defendant's cross-complaint;

Motion & Notice of Motion to Dismiss Cross-complaint, or, in the alternative, to strike and motion to strike from answer;



First Amended Answer to Complaint and First Amended Counterclaim;

Motion & Notice of Motion to Dismiss Defendant's First Amended Counterclaim, or, in the alternative, to strike, and motion to strike from First Amended Answer;

Answer to First Amended Counterclaim;

Motion to Strike from Answer to First Amended Counterclaim;

Minutes of the Court for January 7, 1957;

Notice under Rule 35 U.S.C. 282;

Notice of Filing Deposition of Spencer A. Earnshaw;

Decision;

Findings of Fact & Conclusions of Law;

Judgment;

Motion to Modify the Findings of Fact by Striking therefrom Paragraph 14;

Affidavit of J. Marion Wright;

Affidavit of Robert V. Edwards in Opposition to Motion to Modify Findings;

Notice of Appeal;

Concise Statement of Points Upon Which Appellant Intends to Rely;

Order Enlarging Time Within Which to file & Docket Record on Appeal;



Designation of Contents of Record on Appeal;

and a full, true and correct copy of the Minutes of the Court for November 26, 1956;

B. 1 volume reporter's official transcript of proceedings had on

March 26, 27, 1957;

May 21, 1957;

C. Plaintiff's exhibits 1 through 16, inclusive, and defendant's exhibits A through AK, inclusive.

I further certify that my fee for preparing the foregoing record amounting to \$1.60, has been paid by appellant.

Witness my hand and seal of the said District Court this 17th day of July, 1957.

[Seal]      JOHN A. CHILDRESS,  
                 Clerk,

/s/ By CHARLES E. JONES,  
         Deputy.

In The United States District Court, Southern  
District of California, Central Division

No. 20040-Y Civil

SPENCER A. EARNSHAW,                      Plaintiff,

vs.

AMERICAN PIPE AND CONSTRUCTION CO.,  
a corporation,                      Defendant.

AMERICAN PIPE AND CONSTRUCTION CO.,  
a corporation,                      Counterclaimant,

vs.

SPENCER A. EARNSHAW,  
Counterclaim Defendant.

REPORTER'S TRANSCRIPT OF  
PROCEEDINGS

Los Angeles, California

Tuesday, March 26, 1957, 10:00 A.M.

Honorable Leon R. Yankwich, Judge Presiding.

Appearances: For the Plaintiff and Counter-  
claim Defendant: J. Marion Wright, Esq., and J.  
Calvin Brown, Esq., 453 South Spring Street, Los  
Angeles 13, California. For the Defendant and  
Counterclaimant: Hill, Farrer & Burrill, By:  
Frank D. MacDowell, Esq., 411 West Fifth Street,  
Los Angeles 13, California; and Mellin, Hanscom

& Hursh, By: Oscar A. Mellin, Esq., 391 Sutter Street, San Francisco 8, California. [2]\*

The Clerk: Case 20040-Y Civil, Spencer A. Earnshaw versus American Pipe and Construction Co. Mr. J. Marion Wright, associated with Mr. J. Calvin Brown, for the plaintiff. Mr. Oscar A. Mellin and Mr. Frank D. MacDowell for the defendant.

Mr. Wright: Ready for the plaintiff.

Mr. Mellin: Ready for the defendant. [4]

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The Court: So far as you are concerned, you represent the plaintiff, and you just put on a prima facie case——

Mr. Wright: Yes.

The Court: ——upon your simple question of royalties. Then we will turn to the defendant and let them carry the laboring oar in presenting both their defense and the counterclaim.

Mr. Wright: That is right. [5]

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Mr. Wright: I would like to offer it, and have it marked as our first exhibit.

The Clerk: Plaintiff's Exhibit 1, your Honor. Is that admitted in evidence?

The Court: That may be received.

The Clerk: That is the option agreement.

The Court: That is the exhibit attached to the complaint.

(The document referred to was marked Plaintiff's Exhibit 1, and received in evidence.)

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\* Page numbers appearing at top of page of Original Reporter's Transcript of Record.

Mr. Wright: Letters patent No. 2,168,329 have been admitted by the pleadings, and I offer that as our next exhibit.

The Clerk: Letters patent identified and admitted in evidence as Plaintiff's Exhibit No. 2.

(The document referred to was marked Plaintiff's Exhibit 2, and received in evidence.)

[See Book of Exhibits.]

Mr. Wright: Your Honor, it is admitted that the option mentioned in Plaintiff's Exhibit 1 was exercised, and I have a letter exercising same to offer in evidence as our next exhibit.

The Clerk: Letter dated July 28, 1944, from American [7] Pipe to Mr. Earnshaw, Plaintiff's Exhibit for identification and in evidence as No. 3.

(The document referred to was marked Plaintiff's Exhibit 3, and received in evidence.)

The Court: Go ahead.

Mr. Wright: It is admitted that the contract, Plaintiff's Exhibit 1, as to compensation of royalties was modified, and I offer in evidence a photostat of a letter dated February 26, 1951, by American Pipe and Construction Company modifying the compensation from one-fifth of one cent per square foot to two-fifths of one cent per square foot.

The Clerk: Letter identified, admitted in evidence as Plaintiff's Exhibit No. 4.

(The document referred to was marked Plaintiff's Exhibit 4, and received in evidence.)

Mr. Wright: Then those are the documents that I think have been admitted as documents in the pleadings.

I would like now to call Mr. Earnshaw.

The Court: All right.

SPENCER A. EARNSHAW

the plaintiff herein, called as a witness in his own behalf, having been first duly sworn, testified as follows:

The Clerk: What is your full name, sir?

The Witness: Spencer Arnold Earnshaw.

The Clerk: Thank you. [8]

Direct Examination

Q. (By Mr. Wright): Mr. Earnshaw, you are the plaintiff in this action? A. Yes.

Q. Do you reside here in Los Angeles County?

A. I reside at 132 East 77th Street, Los Angeles, California.

Q. How long have you resided in Los Angeles County? A. Well, close to thirty years.

Q. Are you the S. A. Earnshaw to whom Patent No. '329—I will just use the last figures—was issued? A. Yes, sir.

Q. And you are the Earnshaw mentioned in the agreement in Plaintiff's Exhibit 1?

A. Yes, sir.

Q. Now, after Plaintiff's Exhibit 1 was entered into, did you secure any other further patents?

A. Yes, I had several patents issued to me.

Q. I will show you Patent No. 2,639,943, issued May 26, 1953 to S. A. Earnshaw and ask you is that one of the patents that you referred to?

A. Yes, this is one of the patents.



(Testimony of Spencer A. Earnshaw.)

Mr. Wright: We ask that this be introduced in evidence as our next exhibit. [9]

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The Clerk: Plaintiff's Exhibit 5, your Honor, now in evidence.

The Court: All right.

(The document referred to was marked Plaintiff's Exhibit 5, and received in evidence.)

[See Book of Exhibits.]

Q. (By Mr. Wright): I will show you Patent No. 2,639,942, dated May 26, 1953, issued to S. A. Earnshaw, and ask you if that is one of the patents that you mentioned?

A. This is one of my patents.

Mr. Wright: I offer that in evidence as the plaintiff's next exhibit.

The Clerk: Plaintiff's Exhibit No. 6 identified and admitted in evidence.

(The document referred to was marked Plaintiff's Exhibit 6, and received in evidence.)

[See Book of Exhibits.]

Q. (By Mr. Wright): I will show you Patent No. 2,681,725, dated June 22, 1954, issued to S. A. Earnshaw, and ask you if that is one of the patents to which you have testified?

A. This is one of the patents to which I have testified. [12]

Mr. Wright: We offer this patent in evidence as plaintiff's next exhibit.

The Clerk: Plaintiff's Exhibit No. 7 identified

(Testimony of Spencer A. Earnshaw.)

and admitted in evidence. The same objection, Mr. Mellin?

Mr. Mellin: Yes.

The Court: It may be received subject to the same objection, which is overruled, and the same ruling.

(The document referred to was marked Plaintiff's Exhibit 7, and received in evidence.)

[See Book of Exhibits.]

Q (By Mr Wright): Now, Mr Earnshaw, when did you first approach the American Pipe and Construction Company in regard to your patent '329?

A About in 1941. [13]

\* \* \* \* \*

Q. All right. Then after this meeting was this agreement, Plaintiff's Exhibit 1, prepared, or did you have any more meetings before that took place?

A. We had several agreements prepared, but we couldn't get together on them, and time—a period got away from us, but it was in 1944 when we decided to get an agreement, so I signed up with them in 1944 on this agreement. [17]

\* \* \* \* \*

Q. Now, later on did someone come down to your plant or your home from American?

A. Yes, Mr. Butler and the two Jenkins and another man came to my house.

Q. When? A. In about 1948.

Q. And at that time were you working on, or had under construction any machine?

(Testimony of Spencer A. Earnshaw.)

A. I had a model of a pair of tires, airplane tires they were, they were what you call a panel tread, and I had them laying there on a frame in the yard, and one of the men noticed this thing, and he said, "What's that?"

I said, "That is another machine I am getting a patent on. It's an improvement on my belt machine."

Q. An improvement on the belt machine?

A. Yes.

Q. And describe how that was set up, and how it worked.

A. It was a wooden frame, and there was two shafts, [18] one for each wheel, and the wheels were placed so that they about touched each other, and then as they were driven the centrifugal force would pick up the—would cause the rubber to rise out, and they would get contact, and then they would be in contact as they spun. Then you could feed material between them, and the rollers would throw the material from between those two surfaces.

Q. You had a picture here you gave me a minute ago. Did you take it back?

A. It is in one of my envelopes there. Wait a minute. Wait a minute. Maybe I have got it here. This is it (handing photograph to counsel). [19]

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Mr. Wright: Now, you have presented two pictures here. I will just ask that they be marked for identification. This one that has a front view—I

(Testimony of Spencer A. Earnshaw.)

will just show them to you later—the one with the two tires together, front view, I will ask be marked as the next exhibit for identification.

The Clerk: Plaintiff's Exhibit 8, marked for identification.

Mr. Wright: And the other with the two rollers as the next exhibit for identification.

The Clerk: Plaintiff's Exhibit 9, marked for identification.

Mr. Wright: Thank you.

(The pictures referred to were marked Plaintiff's Exhibits 8 and 9, for identification.)

Q. (By Mr. Wright): I will show you Plaintiff's Exhibit 8, for identification, and ask you what that is?

A. Without the motor on here, this is exactly what the men saw in my yard when they came over there in about 1948. [20]

Q. And I see two tires there. Are those the two tires that you stated that were on the——

A. Those are the two tires, yes, sir.

Q. And how did the material protrude from those?

A. Well, whichever way—now, this was a reversible motor. You could fix it so you could drive it either way, so if you wanted to throw down, you could drive it so that the curve come around, and the wheels turned towards each other, and it would throw down.

Q. Where did it come out,—between the two wheels?

(Testimony of Spencer A. Earnshaw.)

A. It came out from between the two wheels, yes.

Q. And you had that machine there at the time?

A. That is what I had at the time.

Q. Except for the motor? A. Yes.

Mr. Wright: We offer this now in evidence as an exhibit, as Plaintiff's 8.

The Court: It may be received.

The Clerk: 8 in evidence.

(The exhibit heretofore marked Plaintiff's Exhibit 8, was received in evidence.)

The Witness: The motor was in the garage.

Q. (By Mr. Wright): Now, I call your attention to Plaintiff's Exhibit No. 9, for identification, and ask you what is that? [21]

A. This is the same machine, and I had thrown a little material here on the side of the garage, and these other two devices in here are two rubber treads from an automobile, that I had been working with and experimenting with previous to getting the two rubber rollers for this in here.

Q. Now, was this machine there at the time these men came?

A. Yes. This is what they saw, without this and this (indicating). They didn't see these two items here.

Q. Which are these two? The motor?

A. The motor wasn't on.

Q. And the right wheel?

A. This is a wooden wheel with a rubberband around it off the automobile tire.



(Testimony of Spencer A. Earnshaw.)

Q. That is the right wheel?

A. That was just hung up there.

Q. Just answer the question. You said this wheel was not there. Is it the right wheel?

A. I don't know just what you——

Q. This is the right hand. This is the wheel on the right side.

A. It was just hung up there on the right side, just to have it in the picture. And that was way down there, that was stood up there, so that it would be in the picture.

Q. What was it in the picture—the two wheels that [22] came together?

A. Yes, the two panel tread wheels.

Q. And this is just another view of the panel tread wheels? A. That is right.

Q. At that time were the tires smooth, or were they roughened?

A. They were quite smooth, yes.

Q. And the material, when these revolved, would be thrown out between the two; is that correct?

A. Between the two, that's right.

Mr. Wright: We offer this in evidence as Exhibit No. 9, your Honor.

The Court: It may be received.

The Clerk: No. 9 admitted in evidence.

(The exhibit heretofore marked Plaintiff's Exhibit 9, was received in evidence.)

Q. (By Mr. Wright): At that time were those tires inflated or just flat?

A. No, I didn't have the inner tubes in them.

(Testimony of Spencer A. Earnshaw.)

I had inner tubes for them, but I didn't have the inner tubes in them.

Q. The answer is they were not inflated?

A. They were not inflated at that time.

Q. All right. Now, have you been down to the American [23] Pipe and Construction Company to see what they were using as a machine to coat pipe?

A. In 19—well, about the time we signed the agreement in 1944, Mr. Jenkins took me in the yard and showed me a Gillespie machine which was used for inside lining, and then we went around to where the brush machine was located, and he showed me this brush machine which they were coating pipe with.

Q. All right. Now, later on did you go down and see what they were using?

A. Yes, just recently with you and Mr. Brown, and I went there to the plant, and saw what they were using.

Q. What were they using?

A. They had two different machines there. They had one machine with wire brushes on, and it was off to one side like, on small work, and on the main work they were using rubber rollers.

Q. Now, previous to that did you get some pictures of what was in the yard—

A. Yes.

Q. —used for coating?

A. Yes, I got some pictures.

Q. And do you remember about when they were taken?

(Testimony of Spencer A. Earnshaw.)

A. This last—well, I haven't got the date with me right now, but it was this last summer. [24]

Q. All right. Were you there when they were taken? A. No.

Mr. Wright: I will have this marked for identification, first. The one with the side view of rollers on wheels as plaintiff's next exhibit, for identification.

The Clerk: Plaintiff's Exhibit No. 10.

Mr. Wright: And another view more from the end as the next exhibit.

The Clerk: Plaintiff's Exhibit No. 11.

Mr. Wright: And one more, which shows apparently some wheels or pulleys with rubber edges stacked to the left of the picture as our next exhibit, for identification.

The Clerk: Plaintiff's Exhibit No. 12, marked for identification.

(The pictures referred to were marked Plaintiff's Exhibits 10, 11 and 12, for identification.)

Q. (By Mr. Wright): When you went down there recently with Mr. Brown and myself, Mr. Mellin, and members of or officers of the American Pipe and Construction Company, did you see them coating with a machine similar to the one appearing in Plaintiff's Exhibit 10, for identification?

A. Yes, very similar to this machine.

Q. Was it in operation at the time?

A. Yes, it was operating for a few minutes until they stopped for a coffee break. [25]

(Testimony of Spencer A. Earnshaw.)

Q. But they were operating it?

A. They were operating it, yes.

Q. Now, will you explain how the material was protruded from this machine?

A. They have the two rollers, and they have a worm to the rear of the rollers, and the rollers are driven, and then the worm is motivated, and the material comes along the worm, and goes in between the rollers, and the rollers are traveling at a high speed and throw the material.

Q. What about the pipe?

A. The pipe are placed in the front of the machine, and the machine moves along as the pipe revolves to complete the coating.

Q. In other words, the material is protruded as the pipe is going around——

A. That is right.

Q. And the machine moves slowly down so that it takes the whole length of the pipe?

A. The movement of the machine governs the thickness of the material on the pipe.

Q. And that machine appears to be on tracks?

A. And these are rubber rollers on the machine.

Mr. Wright: I offer Exhibit 10, for identification, now as Exhibit 10.

The Clerk: No. 10 may be received, your Honor.

The Court: It may be received.

The Clerk: 10 in evidence.

(The exhibit heretofore marked Plaintiff's Exhibit 10 was received in evidence.)

Q. (By Mr. Wright): Now, I will show you

(Testimony of Spencer A. Earnshaw.)

Plaintiff's Exhibit 11, for identification, and ask you if you saw that machine down there when you went there on this occasion?

A. This would be a similar machine. This machine was not in the same yards when we were taken there, but this is a similar machine.

Q. But that was not down there that day?

A. No.

Q. All right. I will show you then Plaintiff's Exhibit 12, for identification, showing a stack of rollers or sections of rollers, and ask you if you saw rollers similar to that there that day?

A. Yes. I had the pleasure of picking up one of these rollers and looking at it.

Q. And what was it made of?

A. It had a piece of steel in the center of it, which seemed to be rather thin, and had a hole in the middle of the steel, and then this rubber was on the outside edge, forming a tread or tire-like construction around the steel disc.

Q. In other words, it is a rubber facing; is that right? [27]

A. That is right. It is about two inches deep and probably an inch wide.

Q. And did you note how the—when you were referring to Plaintiff's Exhibit 10, did you note how these sections were put together?

A. Yes, they have a shaft. In fact, they have the two shafts in the machine, and these sections are slipped on to the shaft, and then the pulley is tightened up to hold the rubber sections in place.



(Testimony of Spencer A. Earnshaw.)

Q. In other words, that is not one flat roller in one piece, but it is a number of sections put together; is that right?

A. Yes, and the rubber seemed to have maybe a three-eighths inch groove about every half inch around the rubber. That was a circular groove, sort of half a circle.

Mr. Wright. We offer Plaintiff's Exhibit 12, for identification, as Plaintiff's Exhibit 12.

The Court: It may be received.

The Clerk: Plaintiff's 12 in evidence.

(The exhibit heretofore marked Plaintiff's Exhibit 12, was received in evidence.)

Q. (By Mr. Wright): Now, I will show you another photograph, showing a machine, a coating machine and some pipe, which I think is in the process of being coated. I will ask you when you were down there that day did you see a machine [28] similar to that, coating pipe similar to that?

A. Yes. The pipe didn't seem to be of this same diameter. It was smaller diameter pipe, but this was practically the same.

Q. But explain what view is that of the machine? A. What is that?

Q. What view is that of the machine?

A. They don't have the pipe in place here. This is a view looking towards the throwing device.

Q. I see.

A. But the pipe is not in place where it would be during the coating.

Q. Where would the pipe be?

(Testimony of Spencer A. Earnshaw.)

A. Between us and the machine.

Q. Is that the machine you saw down there that day?

A. It is very similar.

Q. And the rollers, are those the objects to the left, that look like two rollers?

A. Yes. No, these are pieces, these things here (indicating).

Q. Wait a minute. I am talking about to the left of the picture.

A. Those are the rollers in the machine.

Q. That machine is on a track, is it?

A. That is right. [29]

Q. And it goes along on that track?

A. Yes.

Mr. Wright: We offer that picture as plaintiff's next exhibit.

The Clerk: Plaintiff's Exhibit 13, your Honor. Is this only offered for identification?

Mr. Wright: No, in evidence.

The Court: It may be received.

The Clerk: In evidence, No. 13.

(The picture referred to was marked Plaintiff Exhibit 13, and received in evidence.)

Q. (By Mr. Wright): Now, Mr. Earnshaw, after you were issued patent number, we will call it, '943, the last three numbers, did you see anybody at the defendant's place of business?

A. Yes. I took the——

Q. Whom did you see?

A. I took the copy, the original copy of the patent to Mr. Jenkins, and showed it to him, and

(Testimony of Spencer A. Earnshaw.)

told him it was an improvement on my belt patent and I wanted to know if he was going to put it to work.

Q. Then you took down a copy of '943. Now, you also had '942 issued the same day. Did you have that with you, too?

A. No, I didn't take that with me at that time.

Q. All right. This '943, Exhibit 5, has rollers, has it not?      A. Yes. [31]

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Q. (By Mr. Wright): Now, after you got that, or when you took that patent down, that '943, you had a conversation with whom?

A. Mr. H. H. Jenkins.

Q. What was said?

A. He said, "Well, you have covered the waterfront." And I said, "Well,"—— [35]

Q. You showed it to him, did you?

A. Yes, I showed it to him.

Q. Did you explain it to him?

A. I explained it to him, that it would be an improvement on what I already had, and that I thought he would be entitled to use it under the contract, and that he should pay me for the use of it.

Q. And what did he say?

A. He said that they were using the rubber wheels at that time, and he didn't think he had to pay me.

The Court: Did he explain why?

(Testimony of Spencer A. Earnshaw.)

The Witness: He just said he was using it, and that he didn't think he had to pay me.

The Court: All right.

Q. (By Mr. Wright): Had you been down there in the meantime, between the time that the contract was signed, Plaintiff's Exhibit 1, and the time you went down there when you took down this '943, Exhibit 5?

A. Yes. I had heard that they were using the rubber instead of the wire brush.

Q. Whom did you see at that time?

A. I saw Mr. Jenkins.

Q. What did you say to him?

A. And I told him that I heard he was using the rubber. He said, "Yes, we are using the rubber, but," he said, "we [36] don't have to pay you to get your patent."

I said, "Well, the patent has been in the Office for some time. It is liable to come out any time."

That was in '48, and the patent came out in '53.

Then I took the patent to him and asked him if he was going to pay me. He said he didn't think he had to pay me for it because they had been using it for some time.

Q. And the pleadings admit that all you received has been the minimum royalty?

A. That is right. The only royalty I have received is the minimum royalty from the American Pipe.

Q. And that was the \$25.00 a month a part of the time, and after the increase \$50.00 a month?

(Testimony of Spencer A. Earnshaw.)

A. When I went to the——

Q. Is that correct?

A. Yes, that is correct.

Q. Did you go down and see anybody at the American Pipe about patent '942, and the other exhibit, Exhibits 6 and 7?

A. Yes, I showed—I even operated this '942, and I had a model there of a single blade thrower, and I operated the device I had there, and showed the Pipe Company that machine.

The Court: Has that been put in?

Mr. Wright: Yes, it is in evidence. [37]

The Court: That is all right.

Q. (By Mr. Wright): You mean that you showed them there, or showed someone the operation of it, or just showed them the patent?

A. No, I believe that Mr. Butler stated he was at my place and saw me coating a garage door with a machine that went up and down.

Q. That was prior to that time, was it?

A. Yes, it was prior.

Q. Now, did you have any conversation with Mr. Jenkins or anybody else when you showed him patent '942, Exhibit 6?

A. Well, this, they didn't figure——

Q. No, did you have any conversation with him is what I want to know.

A. Yes. I showed them the way this device operated, but they didn't think they wanted to use it.



(Testimony of Spencer A. Earnshaw.)

Q. Did you leave a copy with them?

A. I don't believe I left a copy of this machine with them at that time, no.

Q. I call your attention to Plaintiff's Exhibit 7, patent No. '725, when you got that on June 22, 1954, as it is dated, did you go down and take that down there?

A. Yes, I showed Mr. Jenkins this patent, too.

Q. And what is that?

A. This is a belt that can be—that is mounted in [38] a carriage that is on wheels, and can be moved in various directions.

The belt can be given different degrees of angle or position, and it can be raised and lowered, and the material can be thrown from the belt as the belt is put in different positions. And there is a unit on the belt of rubber rollers, so that when the material is placed on the belt, the rubber will grip the material and give it the speed of the belt.

Q. All right. What was the conversation, if any, when you showed him that?

A. At that time he said—well, I took—before I received this Patent Office copy, I had taken another copy of the original Patent Office drawing, and I took it to him, and he said that this machine would not operate all the way around in a circle, which he was thinking about, for the coating of the inside of pipe. He said the machine would not work in an entire circle if it spun around, so he

(Testimony of Spencer A. Earnshaw.)

wasn't interested at that time in using this improved patent.

Q. Now, calling your attention to Exhibit 6 again, patent '942, would you explain what that is—I wasn't sure whether you had—how that operated.

A. You want me to explain it, or did I explain it to them?

Q. I want to know how does it operate?

A. Oh, in this machine there is an elevator frame, and [39] it can be raised and lowered. There is a pusher plate which can be moved back and forth from the rear of the hopper to the front of the hopper. The material is placed in front of the pusher plate, and then there are some impellers down here of blades, impeller blades on shafts, and when the motor is started, they revolve and the pusher plate travels forward, pushing the material toward the impellers, and the impellers receive the material and throw the material forward on to a surface. And the hopper may be raised or lowered to accomplish the job.

Q. You have already testified you showed that to Mr. Jenkins.      A. Yes.

Q. And discussed it with him?

A. That's right.

Q. All right. Can you compare, or, state a comparison in the operation of the machine you saw operating at American Pipe and Construction Company with the machine that you have set forth in patent '943, Exhibit——

(Testimony of Spencer A. Earnshaw.)

The Clerk: '943 is Exhibit No. 5.

Mr. Wright: I have it now. Exhibit 5.

The Witness: You mean what I seen at the Pipe Company?

Q. (By Mr. Wright): The one you saw operating down there, will you compare it—make a comparison between it and the machine you have patented in '943? [40]

A. Well, in both instances we have rubber rollers. The rubber rollers are driven and the material is fed to them, and the rubber bends and lets the material be gripped, and as the rollers come past center the material is released, and the speed, the peripheral speed is what causes the material to be thrown at velocity.

I have worms in the hopper, and they can be used for mixing, and they also furnish a pressure on the material, forcing the material towards the rollers.

Q. How did the one operate down there?

A. The one we saw at the plant was rubber rollers, and the material was fed in between the rubber rollers, and the rubber rollers threw it on the pipe.

Q. By what,—a worm, or what?

A. There was a worm in the machine to force the material into the rubber rollers.

Q. Are there any other similarities?

A. This machine of mine has bearings on both ends of the shaft, and therefore I can build a very wide stream and still be within the limits of the

(Testimony of Spencer A. Earnshaw.)

mechanical effects there, where in the Brend machine in the Brend patent, they are limited to a very narrow stream, because they only use one worm, and there is no bearing to carry the pressure that the shafts—for the material that would go between the two surfaces. [41]

Q. The means for feeding material, then, in your claim is that of what?

A. In Figure 1 I use a multiple number of worms, and also there is a pusher plate which oscillates backward and forward to help push the material all the way across the entire area of the rollers. It has—the pusher plate has several functions, but one of them is to feed the material as it oscillates back and forth.

I can also put on more than one stream, if I want to. I can shut off different worms by using clutches on them, and can have different streams in the function of the machine that way.

Q. What about the speed of the rollers in your patent, as compared to the speed of the ones down there that you saw?

A. The coating requires a certain speed, and I have the speeds at practically any speeds you want to get for coating purposes. In fact, at a little higher speed you can use it for other purposes other than coating.

Q. Have you put your speeds down in your patent or not?

A. No, I did not say how fast I was going to

(Testimony of Spencer A. Earnshaw.)

drive it. I figured I had the scope there of any speed I wanted.

Mr. Wright: That is all for now.

The Court: Just a minute. Let's have a short recess before we have any cross examination.

(A short recess.) [42]

Mr. Wright: If the court please, I wanted to ask one or two more questions.

The Court: All right. We will go on and complete the cross examination before we adjourn, because I have been interrupted. The United States Attorney sent word he was coming down, and he did not come, so we will go on and finish the cross examination, and then we will adjourn.

Q. (By Mr. Wright): Now, Mr. Earnshaw, under your patent '943, will you state about the raising or lowering of the machine?

A. Yes. This hopper can be raised and lowered, and pivoted so that the stream can strike it at different directions from the machine.

Q. In other words, it can throw it in various different directions? A. That is right.

Q. What about the perpendicular?

A. The hopper can also be taken from the machine and set up on its end, and placed back in the machine and throw a stream in a perpendicular direction.

Q. In other words, pipe could be coated standing in a perpendicular direction?

A. The stream would be perpendicular from the



(Testimony of Spencer A. Earnshaw.)

horizontal. The stream could be produced in that way.

Q. Then how would that strike the pipe, or whatever was [43] being coated?

A. That would be an advantage on some coatings, where the stream is a perpendicular stream, and it also is able to produce a horizontal stream.

Q. Well, it could be tilted?             A. Yes.

Q. And strike surfaces at various angles; is that right?

A. It could be tilted so that the stream could be shot down or up, or any directions you want to get at.

Q. What about being rotated?

A. Yes, the machine can be revolved around for different positions of shooting.

Q. Now, your patent—I see that these patents say “Machines.” As I understand, your patent is a machine, and not a process; is that right?

A. I believe that’s right.

Q. Now, one more question. Did you ever go down and ask for royalties?

A. Yes. Whenever I received a patent, I would go to American and ask them for the royalties, when I thought I was entitled to them, and when I found out they were using the rubber surface rollers I asked him to pay me, and that’s when he said he didn’t have to pay me until the patent came out.

Q. Did I understand you that you asked them

(Testimony of Spencer A. Earnshaw.)

that in [44] connection with each of these other patents?

A. Yes. Whenever I talked to him, I asked him—I told him I should be getting my royalties on the use of the rubber rollers, that was the ones they were using, and I thought they should pay me on the basis of the patents on the rubbers, because that was in the agreement.

Mr. Wright: That is all.

The Court: All right.

#### Cross Examination

Q. (By Mr. Mellin): Now, when you first—by the way, you have had no actual experience in coating fibre concrete at all, have you,—you yourself?

A. I haven't—oh, I had a little bit, yes. I had a small piece of pipe there of castiron I got, and I think it was about a six-inch pipe, and I used that on rollers.

I had some rubber wheels I had there, and I put them on some boxes, and I turned the pipe by hand, and I used the blade machine to throw material on with.

Then I tried it with the belt. I had a belt model machine there, and I threw material on this pipe with a belt.

I also had a piece of this pipe that is used around—it is a composition pipe. I believe it was an asbestos pipe. I coated that in experimenting.

Q. That was all experimental work?

A. That was experimental.

\* \* \* \* \*

(Testimony of Spencer A. Earnshaw.)

Q. (By Mr. Mellin): Now, in 1944, before this contract was entered into, or the license agreement with American, Mr. Howard Jenkins, who is now dead, and you put all the conversation in his mouth, he took you out in the yard, didn't he, and showed you a Brend machine? [46]

A. On your first statement, before the contract was signed, I can't say whether it was just before the contract was signed or just after.

The Court: Just a minute. Is the Brend patent in evidence?

Mr. Mellin: It is going to be in in a minute, your Honor. It is not in yet.

The Court: There has been reference to it, and one of the reasons I picked up one of them was to see if it was one of the patents cited in the Patent Office on any of these applications. Was it?

Mr. Mellin: I think it was, your Honor, yes.

Q. You did see the Brend machine in 1944?

A. Yes.

Q. And the Brend machine, except for the fact that the rollers are rubber coated in it now, is identical today, to your own knowledge, from your inspection, with what it was in 1944, isn't that correct, in the hands of American?

A. The Brend machine in those days was driven at a slower speed.

Q. Now, let's get to the construction, first. How do you know of the speeds? Did you ever test them?

A. No. You can see the difference in velocities

(Testimony of Spencer A. Earnshaw.)

of the material when you are looking at them, when they are traveling. [47]

Q. I see. You observed that by observation?

A. Observation, I believe I did.

Q. You have no other information as to whether the speed is the same or not?

A. That would be the way it would be in my mind, yes.

Q. Now, I am asking, did you have any other information as to the difference in the speeds or not?

The Court: Except from observation, from watching it?

Mr. Mellin: Except from watching it?

The Court: You have no other information about the velocity, whether it is different from yours or not?

The Witness: Now, your Honor, there is a little difference there,—the difference from my speed in my machine.

The Court: I am not talking about that. He is wanting to know, and he is asking a question as to whether what you say about the difference in speed is derived from watching the machine, or from another source?

The Witness: From watching the material strike the surfaces, and the way it leaves it when it bounces.

The Court: All right.

The Witness: The bounce will determine the velocity.

(Testimony of Spencer A. Earnshaw.)

Q. (By Mr. Mellin): How long did you watch the machine operating that had rubber brushes on it?     A. At your yard?

Q. Anywhere. The Brend machine, I am speaking of. [48]

A. The day we were there, I don't believe we watched it more than five minutes, and I went around the back side to see the stream being produced.

Q. When did you watch the wire brush machine?     A. In 1944.

Q. And between the two, you determined by that observation that the brush machine was operating faster——     A. Yes.

Q. ——than the wire brush machine?

A. I heard conversation that they were now traveling about 7,000 feet a minute, and in the olden days the material—I can't—I don't believe it was traveling at those speeds at all.

Q. You just don't believe it?

A. I don't believe it was traveling at those speeds.

Mr. Mellin: All right. I show you a photograph—may I have it marked for identification?

The Clerk: A photograph of what?

Mr. Mellin: Of the Brend machine as used by American Pipe.

The Clerk: A photograph of the Brend machine has been marked for identification as Defendant's Exhibit A.



(Testimony of Spencer A. Earnshaw.)

(The photograph referred to was marked Defendant's Exhibit A, for identification.)

Q. (By Mr. Mellin): I show you that photograph, and ask [49] you if that isn't an accurate representation and picture of the Brend machine which you saw coating pipe in the American yards in 1944?

A. No, this is not.

Q. What is the difference?

A. In this machine you are driving with V-belts, and you are using V-belt pulleys on it. That machine was driven by a chain. This machine is driven with V-belts.

Q. Is there any other difference?

A. There is a difference in this hopper. The hopper that I saw in those days came down something like this, at an angle, and it seemed the material was rather full in the hopper, but it seemed to feed from the middle of the machine. This does not seem to be the same setup here at all.

Q. That is the same roller setup or brush setup, isn't it?

A. Whatever this roller is, I can't say, but it looks similar to the way the brushes were mounted at that time when I was in the yard.

Q. I see. Now, at that time they had two counter-rotating brushes, didn't they, in the Brend machine?

A. Yes.

Q. And the material was fed between those brushes, wasn't it? [50]

A. Yes.

(Testimony of Spencer A. Earnshaw.)

Q. And the brushes rotated to expel the material in a flat stream, didn't they?

A. The stream wasn't flat.

Q. Well, did they expel it in a stream, so that we don't get into an argument?

A. The stream seemed to funnel out. It seemed to spread out, to travel.

Q. That is the same operation you saw the other day with the rubber brushes, wasn't it?

A. Well,——

Q. "Yes" or "No," Mr. Earnshaw?

The Court: Just a minute. Just give the man a chance, Mr. Mellin.

Mr. Mellin: I am sorry.

The Court: He is thinking, and besides he doesn't have to answer "Yes" or "No." He can answer, if he can, and then explain it.

The Witness: Well, as I recall, the stream the other day was rather thin, and it was going straight, and it didn't go very far. The machine, when I saw it in 1944, which is a long time ago, the pipe was probably six feet or so away from the machine, and you could see the stuff travel. You could even look at the rocks and watch them bounce and fly around, and the coating produced was in waves, it was in [51] rows. And I often wondered why they couldn't straighten that coating up.

This coating today is a different coating entirely. It is more of a smooth coating.

Q. Will you take a look at this drawing and see

(Testimony of Spencer A. Earnshaw.)

if this does not represent the Brend machine that you saw in 1944?

A. This would represent it with some changes, yes.

Q. Now, at that time they mounted the pipe along side of the Brend machine and rotated the pipe as the Brend machine traveled longitudinally of the pipe, didn't they? A. That is right.

Q. Just like they do today?

A. That is right.

Q. Now, I show you, and I know you are familiar with it, a copy of Patent 2,380,499, and ask you if that does not accurately depict the Brend machine which you saw in American Pipe in the year 1944?

A. This would be very close to the machine we saw in those days. This would be very close to the machine that we saw.

Q. You have seen this patent before?

A. Yes, I have seen this patent before.

Mr. Mellin: I will offer that patent in evidence, your Honor, as Defendant's Exhibit B. [52]

The Court: Patent No. 2,380,499, Defendant's Exhibit B. Offered in evidence, is it?

Mr. Mellin: Offered in evidence.

The Court: It may be received.

The Clerk: B identified and in evidence.

(The document referred to was marked Defendant's Exhibit B, and received in evidence.)

[See Book of Exhibits.]

Q. (By Mr. Mellin): Now, you were told at the

(Testimony of Spencer A. Earnshaw.)

time of that license agreement that American Pipe had bought patent rights or the license to some of the Brend patents, were you not?            A. No.

\* \* \* \* \*

Q. But you understood that they had acquired them, in any event?            A. That is right.

Q. And you never made any contention that any royalties were due you on the Brend machine using wire brushes, did you?            A. No, I did not.

Q. Now, the first time that you claimed royalties was when they substituted rubber brushes in the same Brend machine [53] for wire brushes, isn't that a fact?

A. When they substituted rubber rollers for the wire brushes.

Q. And that is the time when you said, "Now, I patented that and that belongs to me," is that correct, in substance?

A. That is when I said I had the patent on application, and they were using it, and I wanted to be paid my royalties for it.

Q. In other words, your complaint was that they were using rubber rollers in lieu of wire brushes; isn't that correct?            A. That is right.

Q. And nothing else?

The Court: Now, had you demonstrated this new machine with rubber anywhere to them?

The Witness: No, I had not demonstrated it to them. [54]

\* \* \* \* \*

(Testimony of Spencer A. Earnshaw.)

The Witness: I had disclosed the rubber tires to the American Pipe in 1948.

The Court: When?

The Witness: When these men came to my yard.

The Court: That is the first time I have heard that. You had better go ahead and testify about that.

Mr. Wright: It was testified to, however, this morning, your Honor.

The Court: All right. Go ahead.

Q. (By Mr. Mellin): So then the Brend machine was only changed in one particular, and that is when these rubber rollers were substituted for wire brushes, isn't that correct?

A. That is right.

Q. All right. Now, what is the difference to your mind, what is the improvement involved in substituting from wire to rubber, Mr. Earnshaw? What do you contend is the improvement?

A. Well, the rubber has a yielding value. Rubber,—you can push it in like you can your flesh.

Q. Wasn't the same true with the wire brushes?

A. I do not believe so.

Q. Did you ever press them in, and try it? [55]

A. Wire does not have the yielding effect of a rubber roller.

Q. All right. What other advantage was there?

The Court: Which of your patents or improvements gives you the exclusive right to use the rubber?



(Testimony of Spencer A. Earnshaw.)

The Witness: This here (indicating).

The Court: Which one do you claim?

The Witness: This one here (indicating).

The Court: '943. Which of the claims uses the material, or specifies the material?

The Witness: Let me see. "A machine for applying particled material"——

The Court: Don't read it to me. Just point it out to me.

The Witness: "with a resilient surface, a second drum providing an opposing surface to the first drum means for rotating the second drum."

There was a surface there of rubber. That was the resilient material.

The Court: That is all I wanted to know.

The Witness: We have several claims there.

The Court: All right. [56]

\* \* \* \* \*

Q. (By Mr. Mellin): When they changed the Brend machine at American Pipe, except that they substituted rubber for wire brushes, there wasn't one other iota of change made in the Brend machine, was there, to your knowledge?

A. I think there was.

Q. What?

A. In the feeding of the worm. I think there is a change.

Q. In what way?

A. Well, they seemed to have a bar or shaft, or something, to spread the material out, so that the brush don't wear down like it used to.

(Testimony of Spencer A. Earnshaw.)

Q. I see. Now, was there any different result in coating pipe obtained by American Pipe, to your knowledge, when they substituted rubber for wire?

A. They substituted for the wire after they became acquainted with my rubber rollers.

Q. All right. Now, we will get to that. You say you had two airplane tires mounted up in your garage that you showed American Pipe. Now, as a matter of fact, they came out there at your solicitation to look at a perpetual motion [59] machine, didn't they?

A. They came out at my solicitation, yes.

Q. To look at a perpetual motion machine; isn't that correct?      A. That would be correct.

Q. All right. Now, at that time you showed those two tires that you had mounted to Mr. Ad. Butler, who is in the room here, didn't you?

A. They happened to see the two tires in the yard, and asked me what it was.

Q. Mr. Butler did the asking?

A. That is right.

Q. All right. Now, at that time didn't Mr. Butler tell you that they were already using rubber coated rollers in the Brend machine?

A. No, he did not.

Q. That meeting was in 1948, about April of 1948, wasn't it?

A. Like I say, I didn't put the date down as to what date they were there, but there were four of them there.

(Testimony of Spencer A. Earnshaw.)

Q. There was Mr. Howard Jenkins, Mr. Fred Jenkins, Mr. Whiting, and Mr. Butler?

A. I think you are right.

Q. And they came out to see this perpetual motion machine, and you spoke for a minute about these tires to [60] Mr. Butler; isn't that correct?

A. Mr. Butler asked me what it was, and I said, "That is another device I am getting a patent on."

\* \* \* \* \*

Q. All right. By the way, referring to your patent '329, that was a belt machine which you designed primarily for plastering the walls of buildings, wasn't it?

The Court: Is that the one that is called "Plastering Apparatus"?

The Witness: Yes.

Mr. Mellin: Yes.

The Court: I am just trying to keep track of them.

The Witness: I have quite a way of looking at things probably different than anybody else, and when I got the [61] patent, or when I got to the Patent Office I found I had to catalog or had to classify an invention. Any one of these inventions can be used for other uses besides just putting a little plaster on a wall, or something like that.

Q. (By Mr. Mellin): But that is what it was primarily invented for?

A. That was the classification we called it, yes.

Q. To plaster walls of buildings?

(Testimony of Spencer A. Earnshaw.)

A. That is right.

Q. And that is why you had a long belt which is pivoted so that you could raise the discharge end vertically along the walls; isn't that correct?

A. I had a belt there to be raised and lowered, so that you could throw material on the walls, yes.

Q. Now, in the '329 machine, you had two belts, but the material was delivered from the hopper on one belt, and then from that belt it was discharged on to a second belt, and from that second belt was discharged on to the wall; isn't that correct?

A. In that machine I have, the first belt you speak of has a belt above it.

Q. That's right.

A. Which gives the material the velocity of the belt.

Q. And which the patent says, doesn't it, is to smooth the material off on the belt? [62]

A. That is the way it is worded, yes.

Q. Yes. And that is the reason for the overlying belt on the second belt, too, isn't it?

A. To give the material the velocity, yes.

Q. And to flatten it out along the belt; isn't that correct?

A. Yes, it has that purpose, too.

Q. All right. Then you also provide a means for putting a pattern on this plaster as it comes out along that second belt?

A. That is right. That was something I figured out, too.

Q. Then you also have a means of heating that

(Testimony of Spencer A. Earnshaw.)

material on the belt, if you want to use something besides the ordinary mortar?

A. That is correct.

Q. All right. The Brend machine doesn't use any of those features, does it?

A. Plastic material or plaster material is something that you use for one kind of coating, and a heated material probably another kind of coating. I tried to use the thing for whatever it could be used for.

Mr. Mellin: You didn't answer my question, Mr. Earnshaw. Would you read him the question, please?

The Witness: The Brend machine throws the mortar, yes. [63]

Q. (By Mr. Mellin): That is the only thing they have in common, they both throw mortar on to some object? A. Well, that's right, yes.

Q. All right. And in your machine you do it by means of a belt, and in the Brend machine they do it by means of rotating rollers?

A. The belt does the throwing, yes.

Q. And in the Brend by a couple of rotating rollers? A. By the wire brush.

Q. All right. Now, you never contended prior to the time that your '943 patent issued, you never contended that the Brend machine with the wire brushes came within your '329 patent, did you? ;

A. No.

Q. And you don't make that contention now?



(Testimony of Spencer A. Earnshaw.)

A. No, I don't.

Q. And you never expected royalties on the Brend machine, did you, with the wire brushes?

A. Not with the wire brushes.

Q. All right. Then the only time that you started to complain about royalties was when they substituted rubber coated rollers for the wire covered rollers; isn't that correct?

A. I believe that I invented the rubber surface rollers, and I spent my money for that purpose, in believing that I was right, and if I made a mistake in trying to get a patent [64] on rubber rollers, that is something I can't help. But I actually figured that the rubber rollers was something that I invented, because I realized that there was a difference between rubber rollers and wire brushes.

Q. I would like to get that difference,—anything that you can support by any tests you made.

A. The velocity, you can drive the rollers at various speeds, and there is the question of wear and tear. Now, in a statement from the Pipe Company, they say that they will throw more cubic yards of material,—I forget whether it was 400 cubic yards more from the rubber rollers than they will from the wire brushes. [65]

\* \* \* \* \*

The Court: All right. Let me ask you this question: Did any of the machines they ever used have any other element contained in any of your patents except the rubber substitution for the brushes?

(Testimony of Spencer A. Earnshaw.)

The Witness: No, I don't think that they had.

The Court: All right.

Q. (By Mr. Mellin): Now, in your patent '943, Mr. Earnshaw, you have a reciprocating pusher plate to push the material between the rollers. The Brend machine doesn't use that, or American doesn't, does it?

A. No, I don't believe they do.

Q. And you have a deflector roller in Figure 1 for deflecting material up and down, or at angles to the wall. The Brend machine doesn't use that?

A. No. This was a device to be used at different times. You could coat from the machine without using it.

Q. All right. Now, the rollers in your patent [66] '943, together with the hopper, are in a sort of an auxiliary frame which is pivoted to the main frame of the machine; isn't that correct?

A. Would you give me that question again?

Q. The hopper and the rollers in your '943 patent are mounted in a pivotal frame, a frame that can swing, isn't that true?

A. It can be held stationary,—in a position stationary, and it also can be pivoted, or raised and lowered, and moved along the long way.

Q. All right. The American machine does not use that, does it?     A. No, I don't believe it does.

Q. All right. Now, isn't it a fact, Mr. Earnshaw, that the only claim to fame of rubber over wire is the fact that the more abrasive qualities of the—the

(Testimony of Spencer A. Earnshaw.)

abrasive resistant qualities of rubber could make those rollers last a little longer in actual use?

A. There is the wear,—the resistance of the rubber, the resiliency of the rubber, and there is the ability of the rubber to bend and then assume its surface again.

Q. What is your definition of “resilient,” Mr. Earnshaw, as you use it in your patent?

A. Something that is pliable.

Q. Something that is pliable and has the [67] ability to rebound?

A. I am referring to a surface.

Q. All right. Let's call it a resilient surface. What is your definition of a resilient surface?

A. Well, like I say, it can be a composition of rubber of various kinds of material that have that resistance to wear. I was trying to get something that would really stand up. I have been around the cement guns, and I know the nozzles wear, and I know that there is different drawbacks to these different kinds of machines, and I figured that the rubber was the ideal product to use, and that is what I thought I was getting the patent on, was the rubber or the resilient surface to throw it, for the rollers. [68]

\* \* \* \* \*

Q. All right. Let's go into that. Originally you gave them an exclusive license, didn't you?

A. Yes.

Q. All right. Then when you came to them and

(Testimony of Spencer A. Earnshaw.)

said that you had an opportunity of licensing the Gladding-McBean Company under the patent, at your telephone request they wrote you a letter and gave you the permission, didn't they?

A. They said if I could get an agreement, they would give me six months time to get an agreement for throwing clay, [69] that they were not interested in throwing clay, but to make pipe.

Q. All right. Now, you came to them and said you had an opportunity of licensing United Concrete Pipe under your patents, and would they give you the right to license them without any compensation to them, and they did so, didn't they?

A. Concerning the United Concrete Pipe, American and United Concrete had a conversation, and again, as I understand it, United Concrete wanted to use the American Pipe coating machine, and they submitted the copy of my patent to them, and said, "If you will pay Earnshaw this royalty, you can have this device."

Q. And they subsequently gave you free permission to make any deal you wanted with them, under the patent?

A. No, they wouldn't release me entirely. They gave me a letter saying that as long as the United had full control of the patent, they would release, but the way the letter was written, I interpreted it to mean that they would have control if I didn't do business with United Concrete Pipe.

Q. All right. I will read you two letters. This is dated October 30, 1947:



(Testimony of Spencer A. Earnshaw.)

"Mr. Spencer A. Earnshaw,  
143 E. 77th Street,  
Los Angeles, California

"Dear Mr. Earnshaw:

"We hereby authorize you to enter into a non-exclusive [70] license agreement with the United Concrete Pipe Company of Baldwin Park, California, for the use by them of an apparatus covered in your United States Patent No. 2168329 issued August 8, 1939 for a plaster machine and method.

"It is understood and agreed, between you and ourselves, that such non-exclusive license which you are to grant to the United Concrete Pipe Company, will in no way affect the rights which we have under our agreement with you dated February 8, 1944, for the use of said Patent.

"You are to furnish us with an exact copy of the non-exclusive license agreement which you execute with the United Concrete Pipe Company."

No restriction there, is there?

A. I was restricted in this respect, that I couldn't get away from them, where I could tell the United Concrete what they had to do.

The Clerk: The letter dated October 30, 1947, from the American Pipe and Construction Company to Mr. Earnshaw is marked as Defendant's Exhibit C. Do you offer this in evidence, Mr. Mellin?

Mr. Mellin: Offer it in evidence.

The Celrk: It is offered in evidence, your Honor. Is it received? [71]



(Testimony of Spencer A. Earnshaw.)

The Court: It may be received.

The Clerk: C in evidence.

(The document referred to was marked Defendant's Exhibit C, and received in evidence.) [72]

\* \* \* \* \*

Q. (By Mr. Mellin): American Pipe and Construction Company never refused you the right to license someone else under your patent '329, did they, Mr. Earnshaw?             A. Yes, sir.

Q. Who?

A. I had a chance to sign up with Non-Corrosive Pipe Company, and Mr. Jenkins said he didn't want them in competition.

Q. But they gave you the right to sub-license Lock Joint Company, too, didn't they?

A. I believe Lock Joint is a subsidiary of American Pipe.

\* \* \* \* \*

Mr. Mellin: I am sorry, your Honor. I will offer this copy of the license agreement entered into between Mr. Earnshaw and United Concrete Pipe, in which they also agreed to pay a minimum royalty.

The Clerk: Is this offered in evidence? [73]

Mr. Mellin: Offered in evidence, your Honor.

The Court: It may be received.

The Clerk: Exhibit D, identified and admitted in evidence.

(The document referred to was marked Defendant's Exhibit D, and received in evidence.)

Mr. Mellin: I will offer a copy of a letter of

(Testimony of Spencer A. Earnshaw.)

June 6, 1949, to Spencer A. Earnshaw by American Pipe and Construction Company, authorizing him to enter into a non-exclusive license agreement with Gladding-McBean & Co.

The Clerk: Marked as Exhibit E, for identification.

The Court: It may be received.

The Clerk: E in evidence.

(The document referred to was marked Defendant's Exhibit E, and received in evidence.)

Mr. Mellin: I offer a copy of a letter of November 28, 1950, directed to Mr. Earnshaw by American Pipe and Construction Company, authorizing him to enter into a license agreement with Lock Joint Pipe Company.

The Court: It may be received.

The Clerk: Exhibit F identified and in evidence.

(The document referred to was marked Defendant's Exhibit F, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: I will offer a copy of the agreement which Mr. Earnshaw entered into with Lock Joint Pipe Company.

The Court: It may be received. [74]

The Clerk: Exhibit G identified and in evidence.

(The document referred to was marked Defendant's Exhibit G, and received in evidence.) [75]

[See Book of Exhibits.]

\* \* \* \* \*

(Testimony of Spencer A. Earnshaw.)

Tuesday, March 26, 1957, 2:00 p.m. [76]

\* \* \* \* \*

Q. (By Mr. Mellin): Mr. Earnshaw, in substituting the rubber covered brushes in the Brend machine for the wire brushes, [78] is it your contention that that improved the Brend machine?

A. I don't know whether the Brend machine is improved or not.

Q. Would you say that the addition of the rubber brushes in lieu of the wire ones had improved the Brend machine or its operation?

A. The only information I have along that line is that Mr. Jenkins said that he could use the rubber rollers, and he would get more work done for less money.

Now, I have experienced the driving of these rollers. You can drive them with a very small amount of horsepower, and you can drive them at various speeds, and the rubber lasts longer than any other thing that I know of.

Q. Would you say, then, that the use of rubber in lieu of wire was an improvement on the Brend machine?

A. I will say I don't know. \* \* \* \* \* [79]

The Court: All right. Now, what I am going to ask you is: Do you know of any instance where they in using your machines have differentiated from your classical or authorized construction, and substituted rubber, or anything else, which you say they did with the Brend machine? [80]

\* \* \* \* \*

(Testimony of Spencer A. Earnshaw.)

The Witness: I made the improvement on the belt. You have a belt and a roller, or two belts, and and in order to accomplish the throwing of the material, and still cut down the expense of building a machine, I found out that I could take and remove the belt,—you see, I have a belt and a roller, and I could remove the belt, and have two rollers, and that was what I figured was my improvement.

The Court: Did you ever see them use it on any of your machines?

The Witness: No, they never built any of my machines. They said they were going to build them.

The Court: They didn't build any of yours?

The Witness: They never built any belt machines.

Mr. Mellin: May I clear this question up, your Honor? We never built any machines except the Brend machines.

The Witness: All they did was take the rollers from my idea and put it into where the brushes fit. [81]

\* \* \* \* \*

Mr. Wright: While we are talking about the Brend machine, could I ask you: You have no patent on the Brend machine, have you?

Mr. Mellin: Oh, yes. I mean we have the patent under which we are licensed, which is offered in evidence, in 1945.

Mr. Wright: You don't own it?

Mr. Mellin: No, we just have the license under it. [82]

\* \* \* \* \*

(Testimony of Spencer A. Earnshaw.)

Q. (By Mr. Mellin): Taking your other two patents, Mr. Earnshaw, which are '942——

Mr. Mellin: May I have those patents?

The Clerk: Yes, Exhibits 5, 6 and 7.

(The documents were handed to counsel.)

Q. (By Mr. Mellin): (Continuing) That is No. 2,639,942 and No. 2,681,725. Is it your contention that American has used any of the things which you claim are improvements in those patents?

A. The elevator method in the device is used—was used at one time by them for, I don't know just how long a period, but they produced—they introduced the wire brushes into a machine that went up and down as an elevator, and coated pipe that stood on end.

Q. That was the Brend machine that worked vertically instead of horizontally?

A. I don't know if they invented it. I don't know whose machine that could be. It was manufactured over at American, I imagine.

Q. Is there anything else in these two patents '942 or '725 that they adopted and used on the Brend machine?

A. Well, we have the rubber rollers on the belt. We [83] have the rubber rollers on the belt.

Q. In other words, it comes right back to the rubber rollers again, doesn't it?

A. Yes, the rubber rollers are the things I have been working with on these different patents.

Mr. Mellin: That is all.

Mr. Wright: Mr. Mellin, so that we can get it



(Testimony of Spencer A. Earnshaw.)

straight in the record: American does not own the Brend patent, but simply has a license agreement to use it?

Mr. Mellin: I don't know if it is a license or agreement to use it, but I do know they have had since about 1942 the right for them to manufacture and use the Brend machine.

Mr. Wright: And that license agreement is with Brend or Hall?

Mr. Mellin: No, it would be with Lock Joint.

Mr. Wright: With Lock Joint?

Mr. Mellin: They are the owners of the Brend patent.

Mr. Wright: And you figure that is since 1942?

Mr. Mellin: I believe it was in 1942, because that is when we started building the Brend machines. [84]

\* \* \* \* \*

Mr. Mellin: That is all.

Mr. Wright: Your Honor, during the course of the questioning you asked Mr. Earnshaw about these tires that he had when this was first used, and I don't believe you heard it when it was introduced, when he testified about it, and I have pictures here showing what was there.

The Court: I looked at them.

Mr. Wright: Did you see that?

The Court: Yes, I saw the pictures during the recess. I didn't look at them at the time.

Mr. Wright: You asked a question about it, and I don't know whether you had heard that or not.

(Testimony of Spencer A. Earnshaw.)

The Court: Yes, I looked at the pictures during the recess.

Mr. Wright: All right. Now, there was one matter I forgot to ask about. It is just one question.

The Court: All right.

Redirect Examination [85]

\* \* \* \* \*

Q. (By Mr. Wright): And when he made you this offer, what did you say?

A. I said no, that I was entitled to at least my royalty under the contract, and I didn't want to get any less than that.

Q. All right. Then this was typed and handed you by Mr. Jenkins at the time,—

A. That is right.

Q. —after the discussion?

A. That is right.

Mr. Wright: I would like to have this marked and introduced in evidence as our next exhibit.

The Clerk: Exhibit 14. May it be admitted in evidence, your Honor?

The Court: It may be received.

The Clerk: 14 in evidence.

(The document referred to was marked Plaintiff's Exhibit 14, and received in evidence.) [87]

\* \* \* \* \*

Q. (By Mr. Wright): Calling your attention to Defendant's Exhibit E, a letter from American Pipe to you in regard to Gladding-McBean, did you

(Testimony of Spencer A. Earnshaw.)

enter into any license agreement with Gladding-McBean?      A. No, I did not.

Q. All right. You entered into one with the United Concrete Pipe Company?

A. That is right.

Q. And Lock Joint?

A. And Lock Joint Pipe in about 1950. I don't understand why they wanted that agreement with me, unless it was to have the advantage of the rubber rollers.

Mr. Wright: That is all.

#### Recross Examination

Q. (By Mr. Mellin): In connection with these negotiations you just referred to, isn't it a fact that even at a later date the American Pipe offered you and told you that as a nuisance value they would give you \$50.00 a month to get rid of this controversy on '943?

Mr. Wright: I object to that on the ground it is an offer of compromise.

Mr. Mellin: It is the same thing. [88]

The Court: So is this letter.

Mr. Wright: No, the letter is one in which they offered to take and pay these royalties.

The Court: No, this is the subject of this lawsuit, and related to its subject, so if he does not answer the question, I will strike out the offer.

Mr. Wright: I have no objection to him answering it, but I thought that was not an offer of compromise.

(Testimony of Spencer A. Earnshaw.)

The Court: Yes, so is this. It was an offer of compromise to recognize his claim. It was an offer to recognize his claim, which is an offer of compromise.

The Witness: I lost the question.

The Court: Read the question.

(The question was read.)

The Witness: I was talking to Mr. Edwards when this subject came up, and Mr. Edwards was president of the company at that time, and I wanted to sell to him the patent, and he said that he would give me \$50.00 a month for ten years, I think it was, and that's all he would do.

Q. (By Mr. Mellin): \$50.00 a month for ten years, and that's all he would do. And at a subsequent time to that you offered to sell this patent to him, didn't you?

A. Yes, I was wanting to sell it.

Q. And at all times American maintained, didn't it, that this '943 patent, and these others, did not come within [89] the license agreement?

A. They said they were using the rubber rollers,——

Q. I didn't ask you that.

A. ——and that they didn't have to pay me for it.

Q. Didn't they always maintain that the license agreement did not include your later patents; isn't that true? Wasn't that always their position?

A. The license agreement?

Q. That they were not licensed under your later

(Testimony of Spencer A. Earnshaw.)

patents by reason of the license agreement you entered into with them?

Mr. Wright: I object to that on the ground it calls for a conclusion, to maintain. He can state what was said and done, and I went into that.

The Court: He may be asked on cross examination if they made a positive statement, and not what they said. They may offer a categorical answer to a question, so that they may impeach him, by asking the same witness if that question was asked, and that is permissible.

Mr. Wright: That wasn't the question. He said: Did they not maintain? And I say that is a conclusion.

The Court: Let's substitute the word "say" instead of it. Read the question by substituting the word "say."

(The question referred to was read as follows: "Q. Didn't they always say that the license agreement did not include your later patents; isn't that true? [90] Wasn't that always their position? A. The license agreement? Q. That they were not licensed under your later patents by reason of the license agreement you entered into with them?")

The Court: All right. You may answer the question.

The Witness: I can answer it this way—let's see. I have lost it. Let's see. I don't know how to answer the question.

The Court: All right.



(Testimony of Spencer A. Earnshaw.)

Q. (By Mr. Mellin): Now, there was a meeting held at the American Pipe on this matter between yourself, Mr. Simpson, and the officials of the American Pipe Company, isn't that correct?

A. That is right.

Q. And didn't they, the American Pipe officials tell you and Mr. Simpson that these later patents did not come in, they were not licensed under these later Earnshaw patents, and they wouldn't pay royalties on them? Didn't they tell you that?

A. I don't recall those words just exactly like that.

Q. But the substance was that, wasn't it?

A. I am trying to recall that conversation now. They just maintained — they just said they didn't want to pay me any royalty. [91]

Q. Didn't they tell you that the license agreement did not include the later Earnshaw patents?

A. I don't recall that word "license agreement" being mentioned in our conversation.

Q. All right. I have a letter from your attorney, Mr. J. E. Simpson. You recall him?

A. Yes, I do.

Q. It is dated July 20, 1955, and it says this:

"On behalf of Mr. Earnshaw I am hereby advising you that we now understand that it is American's position that Earnshaw's patent No. 2639943 is not included within the License Agreement between American and Earnshaw dated February 8, 1944; that American does not claim, assert or understand that the said patent No. 2639943 is an

(Testimony of Spencer A. Earnshaw.)

improvement upon the Earnshaw patent No. 2169329, the subject of the said License Agreement, and further that Mr. Earnshaw is now and at all times since the refusal of American to pay the costs of patenting the latter patent has been, free to license others to manufacture, use and sell apparatus coming within the metes and bounds of Earnshaw's patent No. 2639943."

That is in substance what they told you at that meeting, isn't it?

A. Is there some more to that letter besides that letter [92] there? Is there another page?

Q. I will hand you the letter. (Handing document to witness.)

A. As I recall the meeting, we asked Mr. Edwards if — let's see. My mind keeps on jumping. I get a thought and I lose it.

We asked Mr. Edwards if the invention would be — if it was involved, and he said he didn't know, at a *later* he would give us the information on that.

There was a question came up about this involvement, and — oh, damn it, I have lost it — and he said that he wouldn't admit at that time.

Now, I think I asked him the question if he knew my patent would run several years longer than his, and he said he hadn't thought about that part of it.

Q. Mr. Fred Jenkins, who is in the courtroom, was in that meeting, wasn't he?

A. Yes, Fred was there.

(Testimony of Spencer A. Earnshaw.)

Mr. Mellin: All right. I will offer that letter in evidence.

Mr. Wright: What is the date of it?

Mr. Mellin: July 20, 1955.

The Court: All right. It may be received.

The Clerk: Defendant's Exhibit H, identified and admitted in evidence. [93]

(The document referred to was marked Defendant's Exhibit H, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: That is all.

Mr. Wright: Just a second. I have another letter here that I want to look at.

Have you got the original, Mr. Mellin, of a letter which was written by Simpson to your client, care of Mr. Edwards, dated June 2nd?

Mr. Mellin: I will put it all in. I have a letter of Mr. Simpson on the same subject dated December 21st,—

Mr. Wright: Wait just a minute. I just asked you a question.

Mr. Mellin: Yes, I have.

The Court: Don't give the substance. If counsel asks you for a document, just show it to him. He may not want it after he sees it.

Mr. Wright: I want to introduce a letter which counsel produced, from J. E. Simpson, dated June 2, 1955, which I won't read, but which relates to the conversation or conference held on February 2, 1955, as the next exhibit.

The Court: All right. It may be received. You

(Testimony of Spencer A. Earnshaw.)

know it is not necessary even in the trial of a case before a jury to have the instrument read immediately into the record. I can look at it and read it, and then in the argument you can read it to me. It is in the record, and it is transcribed, [94] whether you read it or not. Some impression has arisen, and I don't know where it comes from, that when a document is offered it has to be read into the record, too. That is not the rule, and I have never known it to be the rule.

Mr. Wright: I don't understand it is the rule, but it is done frequently because a lot of judges don't read all of these things. I know you do.

The Court: I am not a lot of judges.

Mr. Wright: I know. But we all get out of the habit of it, and we have to go by the average.

The Clerk: Plaintiff's Exhibit 15 identified and admitted in evidence.

(The document referred to was marked Plaintiff's Exhibit 15, and received in evidence.)

The Court: When I try a case before a jury, I even read depositions sometimes between sessions in order to save time. I will look at it.

Mr. Wright: Now, your Honor, I want to introduce in evidence a letter dated June 13, 1955, from American Pipe and Construction Company, Mr. Edwards, president, to Mr. J. E. Simpson, referring to the letter of June 2nd.

The Court: That is an answer to it. All right.

(Testimony of Spencer A. Earnshaw.)

The Clerk: Plaintiff's Exhibit 16 identified and admitted in evidence.

(The document referred to was marked Plaintiff's Exhibit 16, and received in evidence.) [95]

Mr. Wright: That is all.

Mr. Mellin: No further questions.

The Court: You may step down.

\* \* \* \* \*

### FRED F. JENKINS

called as a witness under the provisions of Rule 43(b) of the Federal Rules of Civil Procedure, having been first duly sworn, testified as follows:

The Clerk: What is your full name, sir?

The Witness: Fred F. Jenkins.

The Clerk: Thank you.

Mr. Wright: I didn't hear the first name.

The Clerk: Fred F. Jenkins.

The Witness: That is right. [96]

### Direct Examination

Q. (By Mr. Wright): Mr. Jenkins, what is your occupation?

A. I am vice-president of production for the American Pipe and Construction Company.

Q. And how long have you held that office?

A. About seven years.

Q. How long have you been connected with the American Pipe and Construction Company?

A. About thirty years. Since 1926.

Q. Now, being in charge of production, you are



(Testimony of Fred F. Jenkins.)

familiar with the production of coated pipe, are you?      A. That's right.

Q. That comes under your supervision, does it not?

A. I am not a mechanical engineer, but I am familiar with what it does.

Q. With what goes on. Now, how many coating machines does the American Pipe and Construction Company own for coating pipe?

A. We have one at Portland, which uses rubber brushes.

We have two at Hayward, one with rubber brushes and one with wire brushes.

We have three at South Gate, two with rubber brushes, and one with wire brushes.

We have one at San Diego with rubber brushes.

We have one in Alamagordo with rubber brushes.

Q. Where was the last place?

A. Alamagordo, New Mexico.

Q. Now, I was talking about coating exterior surfaces. It is not inside coating?

A. That's right. You can't use the machines for interior.

Q. Then how many rubber brushes does that make?

A. Let's see. That would be——

Q. Rubber rollers, we will put it.

A. I believe that is five, isn't it? It is six.

Q. Six with rubber rollers?      A. Yes.

Q. And how many wire?

A. It would be three, then.

(Testimony of Fred F. Jenkins.)

Q. Three. At the Los Angeles plant you have one wire brush machine? A. That is right.

Q. And two rubber? A. That is right.

Q. Now, about what percentage of the coating is done with the rubber rollers?

A. Oh, that would be hard to say. I would say that probably in proportion to the number of machines. I am not sure of that. I have never checked it. [98]

Q. Well, isn't it a fact that about 80 per cent of your coating is now done with rubber rollers?

A. It might be, yes.

Q. Now, there is an advantage to using the rubber rollers, is there not, in the coating of pipe?

A. Well, in some places the boys feel so.

Q. What?

A. In some plants the boys feel so. In our Portland plant we use wire altogether. We don't have any rubber up there, and they make the same product as we do in the other plants.

Q. Are you purchasing wire brushes now for the Los Angeles plant, or just using the ones you had on hand?

A. No, we purchase them as we wear them out.

Q. Those wire brushes wear out quicker than the rubber rollers, do they not?

A. It depends on how they are set.

Q. Well, you have to be more careful with the setting of the wire brushes, do you not,—leave more tolerance so that rocks or hard substances can go through without sticking?

(Testimony of Fred F. Jenkins.)

A. No, it is the other way around. You have to be more careful on the rubber brushes, and we have also put up screens, to screen out any rocks, to keep them from going in between the rubber. They will burn a ridge right around [99] the rubber rollers.

Q. But I was asking about the tolerance, though. Is it not a fact that the tolerance on the wire brushes is greater?

A. No, as near as I know—Mr. Butler could probably answer this better, but as near as I know the tolerance or the clearance between the rubber rollers is the same, whether you have it in rubber or whether you have it in wire.

Q. I see. You don't operate these yourself, then, do you,—any of these coating machines?

A. No, I don't. They come under my direction, but I do not operate them.

Q. Now, the rubber brushes or rubber rollers last longer, do they not?

A. As I stated before, it depends on the operation, on how careful you set the brushes.

Q. Well, these rubber rollers can be regrooved, can't they, and used over?

A. That's right, and so can the——

Q. Well,——

Mr. Mellin: Let him answer.

Mr. Wright: Excuse me. Pardon me.

Mr. Mellin: Go ahead, Mr. Jenkins.

The Witness: You wear off so much of a rubber or a wire brush. Then if you change the speed of that brush, which we are trying to maintain at a

(Testimony of Fred F. Jenkins.)

certain speed, you have to [100] change the gearing is the only reason for discarding any one, regardless of whether it is rubber or wire.

Q. My question was: You can re-groove the rubber rollers and use them again?

A. That is right.

Q. And you can do that twice, can't you, so that they can be used three different times?

A. I believe so. I am not positive whether it is two or three.

Q. The brushes, when they wear down, you groove them?

A. When they get to the same size that the rubber would be when you wear them out, then you have to change on account of size.

Q. You can handle more yardage with the rubber rollers, can you not? A. No.

Q. You purchase the rollers yourself, and that is under your supervision?

A. That is right. They are purchased by our purchasing department on the production department's orders for brushes.

Q. Do you know the cost of the bristles for the brushes, the wire brush rollers?

A. No, I don't, only in an offhand way, but it has been figured out. One plant will tell you that they can coat pipe cheaper with wire brushes, and the other one will say that [101] they can do it better and cheaper with rubber.

Mr. Wright: That is all from this witness.

(Testimony of Fred F. Jenkins.)

Cross Examination

Q. (By Mr. Mellin): On these machines that you coat pipe with, you have the Brend type, the Brend machine?

A. That is all we have is the Brend type.

Q. When was that first commenced to be made by American?

A. I believe it was in '42, or somewhere in there. I am not just sure.

Q. And except, leaving out the rubber versus wire brushes,—

A. That is right.

Q. —to your knowledge, was any change made in those machines other than that since 1942?

A. No basic change.

Q. Merely the one change of substituting rubber brushes for wire brushes?

A. That is right.

Mr. Mellin: That is all.

The Court: When was that done, if you remember? Was that done in 1944?

The Witness: No, that was done in early—late '47 or early '48, in that period. [102]

The Court: Late 1947 or early 1948. Just a moment. All right.

Q. (By Mr. Mellin): One more question, Mr. Jenkins. Do you know the reason why rubber started to be used in late '47 or early '48 in lieu of wire?

A. On account of the war. During the war we were not able to purchase the type of wire brushes that we wished to buy. There is difference in the



(Testimony of Fred F. Jenkins.)

wire brushes. You have to have the right gauge of wire in the brushes in order to make them work satisfactorily, and it was hard to do. So we started in to try to protect the wire by using a rubber substance.

Q. I show you a wire brush, and ask you if that is the type you used?     A. That is right.

Q. They were stacked endwise into a roller?

A. That is right.

Mr. Mellin: May I offer that in evidence.

This is one that is worn down, Mr. Jenkins?

The Witness: That is right.

Mr. Mellin: I will offer that in evidence.

The Court: All right.

The Clerk: This is Defendant's Exhibit I identified and admitted in evidence.

(The object referred to was marked Defendant's Exhibit I, and received in evidence.)

Q. (By Mr. Mellin): The rubber rollers that you are now using are made up of rings of rubber of this type?     A. That is right.

The Court: Let me look at it.

(The exhibit was examined by the court.)

Q. (By Mr. Mellin): Now, is there any difference in the product resulting from the use of rubber or wire brushes, that is, the pipe coated by the two, Mr. Jenkins?

A. No. The tests that have been run on our product, and we are required to make, so far as the engineers that we sell this pipe to are concerned, are identical.

(Testimony of Fred F. Jenkins.)

Q. To your knowledge, was there any change in the rotating speeds or the peripheral speeds of the brushes? May I strike that.

In the wire machines and the brush machines that you now have, do you know whether or not there is any difference in the peripheral speeds of the two brushes?

A. So far as I know, they are the same.

Q. Identical? A. Identical.

Mr. Mellin: That is all.

The Clerk: Are you entering both of these?

Mr. Mellin: Yes, I would like to offer this other one, your Honor.

The Clerk: J is identified. It is admitted in evidence, [104] your Honor?

The Court: It may be received.

The Clerk: J in evidence.

(The object referred to was marked Defendant's Exhibit J, and received in evidence.)

Mr. Wright: Just a moment. I am not through yet.

The Court: Just a minute.

### Redirect Examination

Q. (By Mr. Wright): Now, since the war is over, you did not go back exclusively to the wire brushes, did you?

A. Only in the Portland plant, I believe, is the only plant.

Q. Well, you never had rubber brushes up there, did you?

(Testimony of Fred F. Jenkins.)

A. At one time, yes, I believe for a short while. I am not positive of that, however.

Q. Well, then, what was it in the wire that didn't hold up so that you wanted to coat it, as you have testified?     A. Well, to stop the wear.

Q. In other words, they wore faster, and to prevent wear you wanted to coat them with rubber; is that it?     A. That is right.

Q. And that rubber coating that you put on, that wore [105] off, too, didn't it?

A. Anything that you put on wears off, yes.

Mr. Wright: That is all.

Mr. Mellin: That is all.

(Witness excused.)

Mr. Wright: I would like to call Mr. Butler under the same section.

#### ADOLPH G. BUTLER

called as a witness under the provisions of Rule 43(b) of the Federal Rules of Civil Procedure, having been first duly sworn, testified as follows:

The Clerk: What is your full name, sir?

The Witness: Adolph G. Butler.

The Clerk: Adolph G. Butler, called pursuant to Rule 43(b).

#### Direct Examination

Q. (By Mr. Wright): Mr. Butler, what is your occupation?     A. I am an engineer.

Q. For whom?

A. American Pipe and Construction Company.

(Testimony of Adolph G. Butler.)

Q. How long have you been such?

A. As an engineer about—let's see—about 22 years.

Q. How long have you been with the company?

A. About thirty years with the company.

Q. Now, did these coating machines come under your supervision?

A. The construction of them, and much of the operation did, yes.

Q. When did you start using the wire brush for the coating of pipe?

A. We built our first machine in February of '43.

Q. The American Pipe and Construction Company did not buy or acquire a machine already put up, did they?

A. No, we did not. We built it.

Q. You built your own machine there, did you?

A. Yes, sir.

Q. And you built that before you had any license, did you, from Lock Joint?

A. I can't answer that question. I wasn't connected with the official end of it; only the mechanics.

Q. Was that built all at one time or a little at a time?      A. It was built all at one time.

Q. Now, when you built it, you built it with wire brushes?      A. We did.

Q. Were they the same kind of wire brushes that were introduced in evidence here? [107]

A. Virtually the same, yes, sir.

(Testimony of Adolph G. Butler.)

Q. And those wire brushes are put together, are they, to make one long brush, you might say?

A. Assembled on a shaft to make the brush of any desired length.

Q. When did you start using rubber rollers in connection with a pipe coating machine?

A. We first started working with them along towards the end of 1947.

Q. Then were you using the wire brushes up to that time, or were you experimenting with coating them?

A. We were working with coating them at the time.

Q. What were you doing in connection with coating the wire brushes?

A. How we were doing it?

Q. Yes.

A. We were dipping them in a rubber solution, attempting to bond rubber to the individual wires.

Q. Why did you do that?

A. We felt it might improve the life of the wire brush by doing that.

Q. Improve it? A. We felt it might.

Q. In what respect? Longer wear?

A. We are always looking for longer wear. [108]

Q. That was the sole purpose, wasn't it?

A. Anything that would prolong the life is desirable, yes.

Q. And that was why you were putting the rubber coating on it? A. That's right.



(Testimony of Adolph G. Butler.)

Q. Now, you found that the rubber would outlast the wire brushes?

A. At that time it didn't indicate the fact that we were improving them very much, no.

Q. Well, you continued to do that, though, to dip them or coat them, didn't you?

A. We continued to try various methods of coating them.

Q. Yes. None of them worked very well, did they?

A. None too well.

Q. The coating split, did it not?

A. It had various factors that were—nothing resulted in a very great improvement over what we already had.

Q. So when was it, then,—how long did that continue, trying to improve the wire brushes? Was that from 1943 up to the last of '47?

A. No. We didn't start—we didn't actually start ourselves to try using rubber until some time in '47.

Q. Well, but in the meantime you were coating with rubber, were you,— [109]

A. No.

Q. —the wire brushes? A. No.

Q. So you didn't try to experiment at all until the latter part of '47?

A. The latter part of '47, somewhere along in there.

Q. That is when you started to do the coating with rubber? A. That's right.

(Testimony of Adolph G. Butler.)

Q. Then how long did that last?

A. That lasted up until late in 1948, probably.

Q. Late 1948. Then you switched over to rubber then, did you, at that time?

A. Gradually, back and forth.

Q. Well, when did you first start to use all rubber rollers or brushes?

A. It was a matter of probably two or three years before we went exclusively, or went mostly, the greater percentage of it, to rubber.

Q. You mean two or three years after 1949, or when? A. After '48 or '47.

Q. 1948? A. Somewhere in there.

Q. When would that be,—1950 or '51?

A. Probably it would be. When we decided it was probably desirable, and we thought we were doing a better job, or thought we had improved it some at that time.

Q. In other words, the rubber rollers you thought did a better job; is that right?

A. We thought so, yes.

Q. Well, you just had the one rubber roller machine then at first, did you?

A. At first only the one machine.

Q. Then after that you built these other rubber roller machines, did you?

A. We built the machines and put rubber rollers on them.

Q. Those were built then after around '50 or '51,—the others?

A. These machines we have have been produced

(Testimony of Adolph G. Butler.)

over the years. I don't know just the rate at which they have been produced.

Q. Well, in any of these other plants—I withdraw that. The first one you used rubber on was at the plant here in Los Angeles?

A. At the South Gate plant.

Q. Yes. What did you do between 1943 and 1947? What did you use then?

A. We used wire exclusively.

Q. Wire rollers?

A. We used wire exclusively; wire brushes.

Q. That was during the war, wasn't it?

A. That was.

Q. So you had wire brushes during that period?

A. Yes, under very difficult conditions.

Q. But you didn't get the rubber brushes because of the war, then, did you?

A. We had difficulty getting them. We didn't have many machines, either.

Q. You weren't using rubber at all during that period?

A. No, we weren't using rubber, and very little wire.

Q. All right.

A. We didn't have much use of the machines at all during the war.

Q. Well, you were coating pipe during the war, weren't you?

A. A very slight amount.

Q. Rather heavily, weren't you?

A. No, a very slight amount. Only as the Navy required it, which gave us permission to get the brushes we needed.

(Testimony of Adolph G. Butler.)

Q. Now, these rubber rollers last longer than the wire, don't they?

A. No, they do not.

Q. Well, don't you get more use out of one rubber roller than you do out of one wire brush?

A. I have just completed the research since this controversy started, and I find that that is not the case. [112]

Q. Well, you re-groove the rubber rollers, don't you? A. Yes, we do.

Q. And you do that twice, don't you?

A. We can do—occasionally we can do it twice. Not often.

Q. And you coat your big pipe, your big jobs with the rubber rollers, don't you?

A. We do now, yes, sir.

Q. And down at this plant you don't coat big pipe on the big jobs with the wire brushes, do you?

A. We don't, but we could just as well.

Q. I say, you don't?

A. No, we don't right now.

Q. And you prefer to use the rubber?

A. Maybe now we do, yes, sir.

Q. Well, you know you do, don't you?

A. I say we may change very quickly. We made some startling discoveries here recently.

Q. What?

A. I say we made some startling discoveries here recently, and we may change.

Q. You may change all to rubber?

A. All to wire.

(Testimony of Adolph G. Butler.)

Q. All to wire. Well, until you made the discoveries, you swung over to rubber,— [113]

A. Yes.

Q. —did you not? A. Yes, we did.

Q. Well, at first, when you started in on the rubber, you didn't have discs,—rubber rollers on discs, did you?

A. No, we used the wire brush as a base.

Q. As a base. Now, in this local plant here, is it not a fact that the coating you are doing now is about 80 per cent with rubber rollers?

A. That would be a good guess.

Q. And that would be about the same every place except in the Portland plant, where they only have the wire?

A. Possibly. It is just a guess, however.

Q. When you replace these rubber rollers, do you just put on a new rubberband on the disc?

A. Occasionally we do.

Q. That can be done?

A. We have to remove the old one first, which is difficult.

Q. You can just do, what I say, replace it?

A. The old one has to be removed first.

Q. Yes, but you replace it? A. Yes.

Q. Instead of buying an entirely new one?

A. Just the discs is all we save. [114]

Q. In a wire brush roller, you don't replace them yourself, do you?

A. We can wear it down to about six inches in diameter.



(Testimony of Adolph G. Butler.)

Q. Well, you don't replace them,—you buy new brushes, don't you?     A. Yes, after——

Q. You don't replace them or try to save the old brush, or the disc?

A. Well, there is no disc.

Q. Oh, there is no disc on that. All right. Well, did you experiment as to how to compound the rubber on these rollers?

A. We didn't experiment, but Kirkhill did.

Q. Under your direction? You told them what kind of a rubber performance you wanted from the rubber rollers?

A. We asked them for optimum performance that they could give us.

Q. So gradually they have developed a rubber roller now that gives you good performance now, is that correct, for handling abrasive material? That is correct, isn't it?     A. Yes, sir.

Q. And you are gradually discontinuing the brush coaters, aren't you?

A. No, we haven't changed our disposition of the brushes over a period of years now. [115]

Q. Well, maybe this will refresh your recollection, and I will read from your deposition.

A. Yes, sir.

The Court: I think, counsel, if you will refer to it—has the deposition been filed?

Mr. Wright: This is the original deposition, your Honor.

The Court: Has it been filed?

Mr. Wright: I would like to file it now.

(Testimony of Adolph G. Butler.)

The Court: It has to be filed.

Mr. Wright: And I have a copy.

The Court: Otherwise it is not official.

The Clerk: Do we have the original here?

Mr. Wright: Yes, the original deposition is here.

The Court: That will be filed. Then if you will just refer to the section, I am certain that counsel will agree that he made such statements, and then you can save time.

Mr. Wright: Yes. That is all I wanted to do, just to refresh his memory.

Q. Page 10, line 20:

“Q. Are you not gradually discontinuing the brush coaters?

“A. We are discontinuing the wire more or less, yes.

“Q. The wire brushes? “A. Yes.” [116]

You so testified, didn't you?

A. Yes, we discontinued them up to a certain point, and I find since that time that they have not changed. The same machines that had the wire brushes on two years ago still have them on, and the ones that we were using rubber on still have them on. That is since our search here just recently.

Q. Well, there is an advantage in favor of the rubber rollers over the wire brushes, then, isn't there? A. None.

Q. Well, I will call your attention to page 11, line 8:

(Testimony of Adolph G. Butler.)

“Q. There is an advantage in favor of the rubber rollers over the wire brush, isn’t there?

“A. Possibly a little in the life and possibly a little in the cost, but it is not very great.”

That was your answer, wasn’t it?

A. That was then based on our Los Angeles experience. As I say, since then I have information from the other plants which would alter that.

Q. This was taken on January 23rd of this year, when you testified.             A. That’s correct.

Q. You mean since then you made a survey to try to find out whether or not you were correct?

A. The data that Portland brought to me was just brought [117] in in the last week, which has been accumulated over a period of years.

Q. Well, we didn’t have sound records, what we considered good records, from our Los Angeles plant, which only uses the brushes about 20 per cent of the time. We went to our Portland plant, which uses them 100 per cent of the time, and got their costs and operation characteristics.

Q. Your Portland plant has no rubber brushes at all, does it?

A. That’s right. That is why we based our costs on those.

Q. At Los Angeles you say you only use wire brushes about 20 per cent of the time?

A. That’s true.

Mr. Mellin: Wire brushes, or wire machines?

The Witness: I should say the wire brush machines.

(Testimony of Adolph G. Butler.)

Q. (By Mr. Wright): The wire brush machines?

A. The one that has the wire brushes.

Q. The wire machine is the one that has the wire brushes on it, isn't it?

A. That's right. Well, there may be a difference there.

Q. And the yardage, isn't it a fact that as to the yardage, you could do greater yardage with the rubber rollers?

A. Not according to the recent material I just got from Portland. There again I made the statement in my deposition [118] the same way, based on the Los Angeles experience.

Q. Then when you testified, all your testimony was based on the Los Angeles experience; is that it?

A. When I gave you my deposition, yes.

Q. The Los Angeles plant is the biggest one, isn't it,—that is, the Los Angeles outfit here?

A. In what way?

Q. In the output of the coated pipe?

A. No, I can't say that.

Q. Is there any other plant that has more coating machines with rubber rollers than in Los Angeles?

A. The Alamagordo plant probably. It hasn't any new machines.

Q. That is in Mexico?           A. New Mexico.

Q. New Mexico. Did you get a report from it?

A. Yes, I did.

Q. Now, with these rubber rollers you gradually

(Testimony of Adolph G. Butler.)

changed the peripheral velocity from about 1200 to 7000 feet a minute, didn't you?

A. We did with the wire brushes first.

Q. Well, that was during the time you were experimenting with the rubber brushes, you increased that?

A. No, we increased it before that time.

Q. Now, with the wire brushes, if a rock or a hard [119] object goes through, it is apt to come out with great speed and is dangerous to the operators, is that not right?

A. You say with the wire brushes?

Q. Yes.           A. Yes, it is.

Q. That is not true with the rubber?

A. No, it don't come out.

Q. So that is safer?

A. It is more costly, though. That's right.

Q. You don't have much slow down by reason of any rocks or hard objects getting in the rubber rollers, do you?

A. Only after we took the added precaution to always screen the material before it entered the machine.

Q. But you do that with both the brush and the roller, don't you?

A. Now we do, yes. It wasn't necessary to do it before.

The Court: All right, gentlemen.

Mr. Wright: Just one moment.

The Court: If you have reached a good stopping point, maybe if we have a recess now you can use



(Testimony of Adolph G. Butler.)

a part of it to check to see if you want to ask some other questions. So we will take a brief recess.

(A short recess.)

The Court: All right, Mr. Wright. Any additional questions? [120]

Q. (By Mr. Wright): The brush machine that you are using in Los Angeles, that is a small machine, isn't it?

A. They are all virtually the same size.

Q. Well, it does lesser work than the other machine, doesn't it,——

A. Yes, it is used less.

Q. ——when it is working?

A. It is used less.

Q. It works on a different principle, doesn't it?

A. No.

Q. Isn't it used for special work?

A. It is used on a different type of pipe, yes.

Q. Well, at page 15, line 8, I asked you,—no, line 5, or line 4:

“Q. That machine is a small machine?”

The Court: He may ask you a question on this, and if you want to, you may look at the original. Go ahead, but don't say anything, and if you want to, just watch it.

The Witness: I know pretty well what I said.

The Court: I don't know about that. Many people don't remember.

The Witness: Okay.

Q. (By Mr. Wright) (Reading):

Q. “That machine is a small machine?” [121]

(Testimony of Adolph G. Butler.)

A. Wait. Which line was that again?

Q. Just a minute. Line 4:

“Q. That machine is a small machine?

“A. It does a lesser amount of work but it is the same machine. They are all the same size.

“Q. Why does it do less work?

“A. It is the same size but it has a different principle. It is used for special work.”

Is that correct?

A. It is used for special work, yes. The different principle would not apply.

Q. Then that is not correct,—— A. No.

Q. ——that it had a different principle?

A. No.

Q. Now, is there a saving between the cost of operating, or cost of the rubber rollers and the wire brushes? A. Is there a saving?

Q. Can you remember that without reading it?

A. Well, now, I am trying to figure out. I don't quite get the statement.

Q. What is the difference, if any, in the cost of the rubber rollers and the wire brushes?

The Court: Are you asking him?

Mr. Wright: I am asking him a question now.

The Court: I had better take this away. I thought this was going to help him. This is creating confusion, so I had better take it away from him.

The Witness: Okay. I was wondering what you mean by the cost. Do you mean the cost per unit of production?

(Testimony of Adolph G. Butler.)

Q. (By Mr. Wright): The cost of buying them, or obtaining them?

A. The initial cost of the wire brushes are higher than the initial cost of the rubber brushes, yes.

Q. Well, there is a slight saving, isn't there, in the cost of the rubber brushes?

A. I don't know how to answer that. In the cost of operating the rubber brushes, do you mean? I don't follow your question.

The Court: Well, you know what cost is?

The Witness: The cost of producing?

The Court: You are an engineer, aren't you?

The Witness: I don't know what he means.

The Court: The cost,—does it ultimately result in a saving to use the rubber brushes rather than the others?

The Witness: That is what I was trying to get at.

The Court: He is talking in terms of cost accounting.

The Witness: The saving in the use of the material?

The Court: The saving in operation, the saving in results. [123]

The Witness: We thought at the time I made that deposition, there was, yes.

The Court: All right.

Q. (By Mr. Wright): And you thought the wire brushes cost more?

A. Yes, we thought that, and had assumed they had.

(Testimony of Adolph G. Butler.)

Q. All right. Now, what is the life of the rubber rollers, when you use them regularly?

A. By that you mean how much material do we put through them?

Q. Well, how much in cubic yards do you put through them until they are discarded?

A. I have it in pounds. We can put 449,000 pounds of material through before they are changed.

Q. That is the rubber? A. That's right.

Q. And what about the brush?

A. The Portland plant reported here just recently they put 665,000 pounds through the wire brushes.

Q. I am not talking about Portland. I asked you——

A. You asked me the wire brushes, or did you say the rubber again?

Q. The wire brushes.

A. The wire brushes,—that was their report.

Q. I am asking you for your information, and let me ask [124] you this, and call your attention to page 16, line 22:

“Q. What is the life of the rubber rollers when you regularly use them?

“A. We figure that they probably last for about 400 cubic yards of material.”

Is that right?

A. 400 cubic yards,——

Q. Let's stay in yards instead of feet.

A. I have to convert it to pounds. It would be

(Testimony of Adolph G. Butler.)

4,000 pounds, so it would be 160,000 pounds, wouldn't it, 400 yards? No, 1,600,000 pounds, yes.

Q. Let's stick with cubic yards because you testified about that. Now, did you testify:

"We figure that they probably last for about 400 cubic yards of material"?

A. Probably.

Q. Well, you mean, — "probably," you don't know whether you testified that way or not?

A. That was what the Los Angeles plant reported they could do, yes.

Q. Then that was what you said, was it?

A. Yes.

Q. Then the next question:

"Then you can recut them, can you not?"

And then did you answer, "That is with recut."

The Court: Counsel, I think it is getting confusing. The witness does not know whether you are repeating it. Counsel stipulates that you asked him that. I think I was responsible for the confusion by giving him the transcript. I think you can just give the page, and if I want to look at it, I may look at it, and then if you propound a question make it plain to the witness that you are doing it in view of that answer.

Mr. Wright: All right.

The Court: I thought we would gain time by having him have the transcript. Instead of that, it is creating confusion in the witness' mind, because you do not draw the line between what he testified to there, and what he is being asked here.



(Testimony of Adolph G. Butler.)

Mr. Wright: All right. I will ask a question, and not out of his testimony.

The Court: Not out of the book. All right.

Q. (By Mr. Wright): Now, is that 400 cubic yards of material before they are recut, or after?

A. That is the total life of the brush.

Q. The total life. And you cut them about three times as a rule?

A. Twice as a rule, and three times occasionally.

Q. Page 17, line 2:

“Q. How long do they last before they are recut? [126]

“A. We recut them about three times, as a rule; about one-third of their life.”

Is that right?

A. That is approximately right, yes.

Q. That is right. Now, what about the wire brushes, how long do they last? That is, I will put it this way: What is the life of the brushes when you regularly use them, as to the material put through?

The Court: He is asking you a direct question.

The Witness: Yes. I believe that I testified that it lasted about 300 yards.

Q. (By Mr. Wright): Yes. Then the wire brushes, doing the same work, would put through about 300 cubic yards; is that correct?

A. That's right. That has been altered since that deposition, however, but then that is right.

Q. What?

(Testimony of Adolph G. Butler.)

A. That has been altered since that deposition, however, but that is right.

Q. Well, you testified in the deposition——

A. Yes.

Q. ——to the best of your ability and the facts when you were asked the question? A. Yes.

Q. Did anybody tell you to check later, so that you could verify this?

A. We were checking at the time, but we didn't have the results from our Portland establishment.

Q. I see. So that you are relying on the Portland office that has no rubber at all?

A. That's right. That is the way I am basing my wire brush production on now, because I have it, and I didn't have it at the time of the other.

Q. But down here, with your rubber rollers,——

A. That's right.

Q. ——and your wire brushes, your testimony is correct? A. That's correct.

Q. As to this office here, and your plant here in Los Angeles?

A. As to this plant in Los Angeles, yes, sir.

Q. Do the wire brushes cost more than the rubber rollers? A. To operate?

Q. Initial cost? A. Yes.

Mr. Wright: That is all.

### Cross Examination

Q. (By Mr. Mellin): Mr. Butler, talking about the machines counsel asked you about, were or were not those machines built pursuant to drawings you got from Lock Joint? [128]

(Testimony of Adolph G. Butler.)

A. Yes, they were.

Q. When were those drawings obtained?

A. Late 1943 or early '43.

Q. And all of the machines were built pursuant to those drawings?     A. Yes, sir.

Q. I show you a——

The Court: The date of the license agreement is 1947, is it?

Mr. Mellin: 1944, your Honor.

The Court: 1944. All right.

Q. (By Mr. Mellin): I show you a drawing which is a partial assembly drawing of a Brend machine, a blueprint, rather, and I ask you if that is one of the blueprints from which you built the Brend machines?     A. Yes, sir, it was.

Q. And that shows the brush assembly, does it?

A. Yes, it does.

Q. Now, except for the substitution of rubber brushes for wire brushes, has any change been made in the Brend machine during the years?

A. No major change, no, sir.

Q. What is a major change?

A. We have changed the power and the strength of some of the parts. [129]

Q. By "some of the parts," you mean the shafts?

A. The shafts, and the motor power.

Q. It still has the same feed means, does it?

A. The same feed means.

Q. And the same speeds?

A. Practically the same speeds, yes.

(Testimony of Adolph G. Butler.)

Q. In the machines at American Pipe using rubber, and those using wire brushes, is there any difference in the peripheral speed of the brushes?

A. None whatsoever.

Q. Is there or is there not any difference in clearance between the two brushes?

A. No, there is not.

Q. That is, the clearance is the same in wire and in rubber? A. Virtually the same.

Q. Is there any difference between the velocities of the material ejected against the pipe?

A. None that we can observe.

Q. And you testified that when going through a wire machine, a large piece of aggregate, such as a rock, would go through. Why is that?

A. The wires have the ability to wrap around the rock and extrude it.

Q. In other words, the surface yields to the rock? [130]

A. Yes, it yields, wraps itself around.

Q. And then the wire rebounds and throws it out? A. Yes.

Q. Now, what experience have you had of rocks going through the rubber rollers?

A. It is very injurious to the rubber rollers. Usually it lodges behind the rollers and cuts a groove in it before we can stop the machine.

\* \* \* \* \*

Q. (By Mr. Mellin): Now, do you use these machines for [131] anything except coating pipe?

A. None whatsoever.

(Testimony of Adolph G. Butler.)

Q. Will you state any difference, if there is any,—

The Court: Let's find out: What kind of pipe do you coat? Large sewer pipe?

The Witness: No, they are ordinarily steel pipe which we coat externally with mortar.

The Court: Steel pipe used for what?

The Witness: Water pressure.

The Court: Such as the type you have in a water system?

The Witness: In a water main system, yes, sir.

The Court: A water main system?

The Witness: Yes.

Q. (By Mr. Mellin): And is there any difference in the result, the ultimate result of the coating between the wire machine and the rubber machine?

A. None whatsoever.

Q. Now, the only difference between the wire machine and the rubber machine is the fact that the rollers of one is made up of steel wires, such as you have described, and the other is rubber rollers?

A. That is all.

Q. Is there any difference at all in the mode of operation of the machine?

A. None whatsoever. [132]

Q. And any difference in function? A. No.

Q. Have you tried other materials other than rubber and wire?

A. Yes, we have tried plastic, which is no good at all.

Q. Why not?

A. It was too soft.



(Testimony of Adolph G. Butler.)

Q. It wore out rapidly?

A. We used our own material, which we manufactured here at our South Gate plant, and it wasn't particularly qualified.

Q. And what was the fault with it,—the wear? Rapid wear? A. Fairly rapid wear, yes.

Q. Would it throw the material just as well?

A. It would throw the material, yes.

Q. What about steel rollers? Did you use steel rollers? A. Yes, we did.

Q. What did you find there?

A. The same thing. They worked satisfactorily, but they——

Q. But they brazed out?

A. They were not particularly better than what we were using, and there was no object in using them.

Q. When did you first hear of the use of the rubber rollers on the Brend machine? [133]

A. From Hugh Kennison back along in 1946 or '47.

Q. And who is Hugh Kennison?

A. He is the chief engineer for the Lock Joint Pipe Company.

Q. Do you know what success or lack of success they had with the use of the rubber brushes instead of the wire brushes?

A. They eliminated them, that's all I know, so they evidently were not satisfactory.

The Court: By the way, you asked the question,

(Testimony of Adolph G. Butler.)

and the answer was uncertain. Which did they eliminate?

The Witness: They eliminated the rubber.

The Court: Oh, the rubber.

Q. (By Mr. Mellin): To your knowledge, they use all steel brushes?

A. They use all steel brushes now.

Q. Did you happen to see a Lock Joint machine in Israel?

A. I never saw one there. I saw one that went to Israel, but I didn't see it in Israel.

Q. What kind of brushes did that have?

A. Wire brushes only.

Q. And have you seen their machines in Dallas?

A. Yes, sir.

Q. And what kind of brushes are they using?

A. They are using wire brushes. [134]

Q. Now, you hear Mr. Earnshaw testify that he showed you a couple of rubber tires mounted together in a garage?

A. Yes, I did.

Q. Now, were they inflated or deflated tires?

A. They were not inflated. They did not have any tubes in them at all.

Q. Now, when was that? Was it before or after you started to work on rubber yourself?

A. It was after I had started to work on it.

Q. And when was it,—before or after Mr. Kennison spoke to you about Lock Joint using rubber rollers?

A. It was after Mr. Kennison spoke to me about it.

(Testimony of Adolph G. Butler.)

Q. Considerably after, or not very much after?

A. Considerably after.

Q. Now, these ones that you dipped and coated with Latex late in 1947, as you testified, did that merely coat the wire, or did it form the wire and the Latex into a solid mass?

A. It formed it into a solid mass. It made it up with a rim on it, almost like this appeared here.

Q. Now, would they or would they not operate satisfactorily to discharge the material through them?

A. They would discharge the material all right.

Q. But they wouldn't last long? [135]

A. Well, I couldn't bond them to the wire. I mean, I didn't know the technique of bonding them to the wire.

Q. Did you subsequently discover it, or did someone else?

A. Kirkhill finally helped us out on it, yes, sir.

Q. And that was when?

A. That was in 1948, early.

Q. I hand you what appears to be a drawing dated 3-8-48, and a sketch dated March 5, 1948, and some notes attached to it. Would you tell us what they are?

A. This first one, dated March 5, 1948, was in preparation for an interview I had that day with Mr. Haney, president of the Kirkhill Rubber Company.

Q. What is depicted on it?

A. It is what we proposed, or what they pro-

(Testimony of Adolph G. Butler.)

posed that we do in order to coat our wire brushes with rubber.

Q. To make a solid or an unsolid rim?

A. A solid rim on our wire brushes.

Q. And what is the next document?

A. The next is the design of the die that we worked with.

Q. Were those sketches and drawings made about the date they bear?     A. Yes, they were.

**Mr. Mellin:** I will offer these three documents in evidence, your Honor. [136]

The Court: They may be received as one exhibit.

Where is the date?

**Mr. Mellin:** Up on the left, your Honor, on that drawing.

The Court: I will take off my glasses to see whether it is 1946 or 1948.

**Mr. Mellin:** 1948, your Honor.

The Court: The date was a little smudged.

The Clerk: We have a blueprint here also, which is marked.

The Court: This precedes the blueprint.

The Clerk: No, your Honor. This was mentioned ten minutes ago.

**Mr. Mellin:** May I offer it now, your Honor?

The Court: All right.

The Clerk: A blueprint has been marked for identification. Did you offer it in evidence?

**Mr. Mellin:** We offer it in evidence.

The Court: It may be received.

(Testimony of Adolph G. Butler.)

The Clerk: Offered and received as Defendant's Exhibit K.

(The document referred to was marked Defendant's Exhibit K, and received in evidence.)

The Clerk: And three pages of drawing are marked for identification as Defendant's Exhibit L. Do you offer this in evidence? [137]

Mr. Mellin: I offer this in evidence.

The Clerk: In evidence, your Honor?

The Court: Yes, it may be received.

The Clerk: L in evidence.

(The documents referred to were marked Defendant's Exhibit L, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: That is all, your Honor.

The Court: All right. Any redirect?

\* \* \* \* \*

### Redirect Examination

Q. (By Mr. Wright): You have a screen now that screens all the hard substances and rocks out before they get into the rollers?

A. Yes, we do.

Q. That is correct? [138]

A. Yes, sir.

The Court: I am sorry, but I was asking the clerk to mark some pages here.

Q. (By Mr. Wright): You say that you have the materials screened out before it enters the rollers?

A. Yes.



(Testimony of Adolph G. Butler.)

Q. So you have no problem any more with rocks?

A. We have practically eliminated it, yes.

Q. When did you go to Mr. Earnshaw's house on that occasion that you saw the rollers?

A. It was some time in the early part of 1948. I don't remember the exact time, but it was right along about the time this other thing had taken place.

Q. And you saw his tires there put together as rollers, did you?     A. I surely did.

Q. And they were deflated, that is, without tubes?     A. That is correct.

Q. And you saw how they operated, did you?

A. Yes, I did.

Q. And throwing material through them?

A. Yes.

Q. Extruding material through them,—you saw that, didn't you?     A. I did. [139]

Mr. Wright: That is all.

Mr. Mellin: No further questions, your Honor.

The Court: All right. Step down, Mr. Butler.

(Witness excused.)

The Court: Call your next witness.

Mr. Wright: That is all our evidence.

The Court: All right. Put on your witness.

\* \* \* \* \*

The Court: Now, let us have an understanding. You adopt the testimony given by the two officers as a part of your case?

Mr. Mellin: Yes.

The Court: Then you may present any additional testimony you have.

Mr. Mellin: At this time I would like to offer in evidence the deposition of Mr. Earnshaw taken in this action, which has already been filed.

Is there any necessity of reading it, your Honor?

The Court: No. Unless there are any objections, I will [140] take it and read it between now and tomorrow's session.

Are there any objections to any questions, Mr. Wright? If so, we will need to read it.

\* \* \* \* \*

Mr. Wright: I don't think there are any objections, your Honor.

The Court: I don't know whether there are. You will have to waive them in advance. Otherwise the questions and answers will be read.

Mr. Wright: I will waive them.

The Court: All right.

Mr. Mellin: May I have the deposition of Hugh F. Kennison taken in this case opened, your Honor?

The Court: The clerk is directed to open it. The deposition of Mr. Earnshaw will be received in evidence and marked as Defendant's Exhibit M.

The Clerk: That is Defendant's Exhibit M, the deposition of Spencer A. Earnshaw.

The Court: That may be received and transcribed in any record prepared in this case, and the court will read it before [141] the next session.

Mr. Mellin: Now, your Honor,—

The Court: Just a minute. You are going too fast. Whether I work here or in San Francisco,

where I haven't been for a long while, I like speed, but not too much speed, or we will lose track of things.

The Clerk: For the record again, your Honor, the deposition of Spencer A. Earnshaw is marked for identification and admitted in evidence as Defendant's Exhibit M.

(The document referred to was marked Defendant's Exhibit M, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: Now, I have a deposition taken in New Jersey of Mr. Hugh Foster Kennison in this case upon notice. Does your Honor want me to read it and offer the exhibits as it is read?

The Court: Yes, that will have to be read. This other one is offered merely as a contradiction. A deposition like that would have to be read, and the particular exhibits would have to be identified. You can put one of your associates on the witness stand and ask him the questions. It saves time. Then the exhibits, as we reach them, have to be——

Mr. Mellin: Renumbered, your Honor?

The Court: ——renumbered to conform to the continuity that we have given them in this case.

Mr. Mellin: Will you take the original? [142]

The Court: You can use N as a start, and mark them N-1, -2, and -3, and so forth, showing they are attached to the deposition, in that manner.

The Clerk: I can mark them now, your Honor, to save time, if they will give them to me.

The Court: Have you got them?

Mr. Mellin: I have them right here, your Honor.

The Court: They were not sent up with the deposition under seal.

Mr. Mellin: They are right here, your Honor.

The Court: All right.

Mr. Mellin: There are duplications, your Honor, the patent to Brend and the patent to Earnshaw, so they need not go in again.

The Clerk: The deposition of Kennison is marked for identification as Defendant's Exhibit N.

The Court: All right.

(The document referred to was marked Defendant's Exhibit N, for identification.)

[See Book of Exhibits.]

Mr. Mellin: This is the deposition of Hugh Foster Kennison:

## DEPOSITION OF HUGH FOSTER KENNISON

"Q. Will you give your name in full, your residence address and your age?

"A. Hugh Foster Kennison, Avon Drive, Essex Fells, New Jersey, age 40. [143]

"Q. And what is generally your training; I mean, are you an engineer?

"A. Yes, I am a civil engineer, graduate of M.I.T. in 1939.

"Q. And what is your occupation?

"A. I am engineer for Lock Joint Pipe Company.

"Q. And what is their address?

"A. 150 Rutledge Avenue, East Orange, New Jersey.

(Deposition of Hugh Foster Kennison.)

“Q. And what is their business, generally?

“A. Their business is the manufacture of reinforced concrete pipe, which also includes pre-stressed pipe, mainly for water supply use.

“Q. Will you state whether or not during the past years you have manufactured any pipe by a process which includes the spraying of a cementitious material on a steel pipe?

“A. I presume you mean on a pipe with steel in it.

“Q. Yes.

“A. Yes, all of our pre-stressed pipe manufactured in certain sizes uses a sprayed-on mortar, cement mortar coating. This probably represents, in total, several thousand miles of pipe.

“Q. And then it becomes a sort of a steel core and a cement coating on the outside, or cement-mortar coating? “A. Yes. [144]

“Q. When did you first build a machine for spraying pipe of that character, if you know?

“A. In 1940 and approximately '41.

“Q. By the way, how long have you been with Lock Joint Pipe Company? “A. Since 1939.

“Q. At that time, or sometime thereafter, did Lock Joint Pipe Company manufacture a machine now known as the Brend Machine? “A. Yes.

“Q. I show you a drawing numbered B-1-413, dated January 23, 1942. Are you familiar with that drawing? “A. Yes.

“Q. And what does that drawing depict, just generally?



(Deposition of Hugh Foster Kennison.)

"A. This is a profile of the Brend type coating machine through the worm and brush housing assembly.

"Q. And I show you a second drawing numbered B-1-418, dated February 24, 1942. Do you recognize that drawing?

"A. Yes, this is the same machine, but a vertical view, and sectional view, of the brush assembly and brush mounting.

"Q. And where it says, 'Osborn Masterwheel Brushes 10" Dia., No. 152-25,' is that what you are terming the brush of the machine? [145]

"A. Yes.

"Q. Is that in one unit or is it made up of a number of brushes?

"A. It is made up of a number of brushes.

"Q. Arranged axially and bolted together?

"A. Yes.

"Q. And I show you a third drawing, labeled B-1-413A, dated May 14, 1943. What is that?

"A. This is a revision of the original drawing, B-1-413, with some minor technical revisions relating to wheel assembly, and so forth.

"Q. When was that machine built that was depicted on these drawings, to your knowledge?

"A. This machine was built just after these drawings were dated, and prior to the latter part of 1942.

"Q. And these drawings were made at the time, to your knowledge, the time that they were dated, or completed at that time? "A. Yes.

(Deposition of Hugh Foster Kennison.)

“Q. And you brought them here from the files of the Lock Joint Company, did you?

“A. Yes.

“Q. Now, I show you a copy of the Brend Patent, No. 2,380,499, which was heretofore identified in this [146] litigation as American Pipe Exhibit 2 to the Earnshaw deposition. Do you recognize the machine depicted in that patent?

“A. Yes.

“Q. And is or is not that the machine that is illustrated in the drawings to which you have just testified?

“A. Basically, it is the same machine.

“Q. Is there any substantial difference at all, except in dimensions of parts?

“A. There is a slight difference in the mounting, the drive of the brushes. In this patent it is pictured being driven by one motor. I believe in this machine, although it may not be shown——

“Q. You mean the machine in the drawings, B-1-413, B-1-418 and B-1-413A?

“A. Particularly the revised drawing, B-1-413A—the drive is a little different, but essentially the same, for the brushes.

“Q. The brush operation of spraying the pipe is the same or different?

“A. It is identical.

“Q. And those brushes, how were they made in the machine that you manufactured at the time?

“A. We purchased Osborn brushes. And this

(Deposition of Hugh Foster Kennison.)

number you [147] referred to is their manufacturing number.

“Q. That is that 152-25?            “A. Yes.

“Q. And they are still wire brushes, are they?”

Mr. Mellin: By the way, your Honor, may that be corrected, with the consent of counsel, to “steel”?

The Court: All right.

Mr. MacDowell: (Continuing reading):

“A. Yes, pre-mounted in the hubs. And the picture illustrates the use of five brushes per roll.

“Q. Those were counter-rotating brushes, as shown in the patent that we have just mentioned, No. 2,380,499?            “A. Yes.”

Mr. Mellin: At this time I will offer drawings B-1-413, B-1-418, and B-1-413A in evidence as American Pipe exhibits.

The Court: All right. Give them separate numbers, N-1, N-2, and so forth.

The Clerk: I have already numbered them, your Honor, in the sequence of the defendant's exhibits. I will give them to the reporter in a minute.

The Court: Have they been numbered for the record, Mr. Cunliffe?

The Clerk: I am numbering them according to the exhibit numbers here, your Honor.

The Court: Then state for the record what that is. [148]

The Clerk: A drawing, B-1-413, Defendant's Exhibit O; a drawing, B-1-418, Defendant's Exhibit P; a drawing, B-1-413A, Defendant's Exhibit Q.

(The documents referred to were marked

(Deposition of Hugh Foster Kennison.)

Defendant's Exhibits O, P and Q, and received in evidence.)

The Court: I will have to look at them later, because this case will not be completed tonight. I will look at them tomorrow, or between now and tomorrow morning, and if you will leave that Earnshaw deposition out so that I can look at that later, too.

All right, go ahead.

Mr. Mellin: The next offer, your Honor, is the Brend patent, which is already in evidence as Defendant's Exhibit B, I believe.

The Court: All right.

Mr. Mellin: (Continuing reading):

"Q. Would you state whether or not the wire brushes operated successfully to spray the concrete on pipe in the machines you built in late '42 and '43?     "A. Yes.

"Q. And at that time did you try any brushes of any different construction, that time or later?

"A. At that time we tried different brushes of various wire brush manufacturers to get better life.

"Q. What do you mean by better life, Mr. Kennison? [149]

"A. Longer usage per dollar cost of brush. That is, we investigated some very high quality brushes, very expensive brushes, on the assumption that we would get more yardage through the machine before the brushes were worn out.

"Q. And at that time or thereafter did you try brushes of any other material, other than wire?



(Deposition of Hugh Foster Kennison.)

"A. At a later period we tried brushes of rubber.

"Q. And that was about when, as you recall?

"A. Early to the middle part of 1946.

"Q. Now, I show you what purports to be a drawing on the drawing paper of Lock Joint Pipe Company, which is dated 5-21-46, and ask you if you can identify it.

"A. Yes, this illustrates one of the rubber brushes that was used on the machines.

"Q. And that was used in lieu of the brushes illustrated on drawing B-1-418?

"A. Yes, this was a direct replacement on that machine.

"Q. And would you briefly describe the rubber brush shown in this drawing, which you have just identified, that is, the drawing dated 5-21-46?

"A. This was a steel drum in which a one inch thick rubber layer was placed around its periphery.

"Q. Was that vulcanized on or not? [150]

"A. Yes, it was vulcanized on by the Manhattan Rubber Company. And we grooved it, as shown, with a tire-grooving machine.

"Q. That was grooved longitudinally, as illustrated in this drawing? "A. Yes.

"Q. And do you know whether those brushes were actually made?

"A. They were actually made and were used."

Mr. Mellin: I will offer a photostatic copy of the drawing in evidence as American Pipe exhibit next in order.



(Deposition of Hugh Foster Kennison.)

The Clerk: Now marked as Defendant's Exhibit R.

The Court: All right. It may be received.

(The document referred to was marked Defendant's Exhibit R, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: (Continuing reading):

"Q. I notice this is a photostat of a drawing, rather than the original. Can you explain that?

"A. In the past few days we have tried to locate the original. Since it was not given a drawing number, those drawings have been kept in a miscellaneous file drawer as sketches. We were not able to locate the original.

"Q. I notice on here there is noted the notation, 'Attention W. L. White.' Do you recognize that printing? [151]

"A. Yes, this is my own handwriting. And this drawing was transmitted to Manhattan Rubber. Mr. W. L. White at that time was, and I believe still is, employed by Manhattan.

"Q. I hand you a carbon copy of a letter addressed to Manhattan Rubber Company, Passaic, New Jersey, attention W. L. White, dated May 21, 1946. What is that letter?

"A. This is a letter that I wrote transmitting the sketch.

"Q. Exhibit 5?"

And Exhibit 5, which is the drawing, is now——

The Clerk: Exhibit R.

Mr. Mellin: Exhibit R.

(Deposition of Hugh Foster Kennison.)

Mr. MacDowell: (Continuing reading):

“A. Exhibit 5. To the Manhattan Rubber Company. This is the basis of their work in putting the rubber covering on our steel drum, which we manufactured.

“Q. In other words, to fabricate the rollers shown in Exhibit 5,”—which is now Exhibit R here? “A. Yes.

“Q. And this carbon copy of the letter came out of your files? “A. Yes.”

Mr. Mellin: I will offer that in evidence as American Pipe’s exhibit next in order. [152]

The Clerk: Defendant’s Exhibit S.

(The document referred to was marked Defendant’s Exhibit S, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: (Continuing reading):

“Q. Did you give them an order at that time to manufacture it?

“A. Yes, we gave them an order, Order No. 2259. That is Lock Joint Pipe Company purchase order.

“Q. And you have with you a photograph of that order? “A. Yes.

“Q. Would you explain why it is a photograph rather than the original order?

“A. Several years ago all of our records were put on microfilm. This is a photograph from that microfilm record.

“Q. And the originals were destroyed, were they?

(Deposition of Hugh Foster Kennison.)

“A. Yes, the originals were destroyed.

“Q. And is that the order for them to produce the device shown in Exhibit 5,”—which is R here —“the rubber-covered drum that had grooves in it?

“A. Yes, it speaks of 2 steel tubes to be rubber coated 8” O.D. by 8” long.

“Q. Did you subsequently receive the original of the order that was sent to Manhattan? [153]

“A. Yes.

“Q. And is this the one that I have in my hand?

“A. Yes.

“Q. And that is the original of the order which was photographed, which you just produced?

“A. From our files, yes.

“Q. And you obtained that from Manhattan Rubber Company recently?

“A. Recently, just before they were going to destroy their order.”

Mr. Mellin: I will offer the original of that order, your Honor.

The Court: It may be received.

The Clerk: The original of that order is marked as Defendant’s Exhibit T.

Mr. Mellin: And I will also offer a photograph of the copy.

The Court: It may be received.

The Clerk: Exhibit U.

(The documents referred to were marked Defendant’s Exhibits T and U, and received in evidence.)

[See Book of Exhibits.]

(Deposition of Hugh Foster Kennison.)

Mr. Mellin: (Continuing reading):

“Q. I show you a document which states, ‘2 sleeves to cover metal cylinders,’ and ask you if that was likewise received from Manhattan Rubber Company? [154]

“A. Yes, we obtained it from Manhattan relative to the rubber brushes.

“Q. Relative to the same transactions that we have been referring to?           “A. Yes.”

Mr. Mellin: I offer that document, your Honor, as the next in order.

The Court: It may be received.

The Clerk: Exhibit V.

(The document referred to was marked Defendant's Exhibit V, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: (Continuing reading):

“Q. Now, will you state whether or not those rubber-covered drums were or were not actually built about at the time that we are speaking of in '46?

“A. Yes, they were actually built, and they were returned to us, and we ran—or produced some pipe with those brushes on June 13 and 14 of 1946.

“Q. What became of the pipe, was it sold or destroyed, or stored?

“A. Some of the pipe may have been—the coating may have been removed; other pipe, that were satisfactory, were actually sold.

“Q. And those rubber brushes were installed on

(Deposition of Hugh Foster Kennison.)

a machine substantially the same as the machine shown in the Brend Patent, Exhibit 4?

“A. Yes, essentially the same, on a production machine. [155]

“Q. And they were substituted for the two wire brushes shown in Fig. 2 of that patent?

“A. Yes.

“Q. And for the same or a different function and purpose?

“A. For exactly the same purpose.

“Q. What results did you obtain from those brushes, the rubber-coated ones that you are speaking of?

“A. We ran a pre-measured amount of mortar through them, and accurately measured the wear on each brush. This information was recorded and plotted to produce a wear curve.

“Q. Do you have those with you?

“A. Yes.

“Q. Are these the documents that I hand you now?

“A. Yes, these are the originals, and there is a copy of them.

“Q. And who were they made by?

“A. The tests were made by myself.

“Q. And these are in your own handwriting?

“A. Yes.”

Mr. Mellin: I now offer the original of those notes in evidence as the next exhibit in order.

The Clerk: The notes are marked for identifica-



(Deposition of Hugh Foster Kennison.)

tion as W, and the graph as Exhibit X. Are you offering them in evidence? [156]

Mr. Mellin: Offering them in evidence.

The Clerk: Are they in evidence, your Honor?

The Court: They may be received.

(The documents referred to were marked Defendant's Exhibits W and X, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: (Continuing reading):

"Q. I hand you a letter on the letterhead of Raybestos-Manhattan, Inc., dated June 10, 1946, which says this, in part, 'We have shipped you under our Order 2i25-CNY under date of June 5 the rubber-covered steel drums which you sent us.' What does that refer to?

"A. This refers to the same rubber-covered drums we have been discussing and which were tested.

"Q. That is, the ones shown on Exhibit R, the sketch? "A. Yes.

"Q. And those are the ones you actually used in the machine? "A. Yes.

"Q. And what was the reason why you were testing rubber-coated drums in lieu of wire brushes, if there is a reason?

"A. We were always looking for more economical means of producing pipes, and it was felt that rubber [157] might have some advantage in this particular application."

Mr. Mellin: I offer the letter that was just

(Deposition of Hugh Foster Kennison.)

identified by the witness as our next in order in evidence.

The Clerk: All right. It may be received.

The Clerk: Exhibit Y in evidence.

(The document referred to was marked Defendant's Exhibit Y, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: (Continuing reading):

"Q. And this letter of June 10th we have just been referring to came out of the Lock Joint files?

"A. Yes.

"Q. After you tested the rubber-coated brushes, as shown in Exhibit 5,"—which is R here—"as you have testified, what, if anything, did you do further in connection with rubber-coated brushes?

"A. Well, the tests indicated that the brushes would be—or might be of advantage if we had greater allowance for depth of wear. These brushes we have just talked about only allowed for about 1/2" of radial wear. So later that year, we designed a new housing in which we could put in rubber vanes. This housing is illustrated on drawing B-1-567, dated 8-15-46.

"Q. That is the drawing we have in front of us?

"A. Yes.

"Q. Will you tell us more about that, please?

"A. As you can see from the drawing, we were allowed here about an inch and a quarter wear.

"Q. That is, radially?

"A. Radial wear. We obtained some material from Manhattan, sheets of rubber, 1/2" thick by 5"

(Deposition of Hugh Foster Kennison.)

wide, which we formed into the shape shown, the U-shaped vane.

“Q. And I hand you what appears to be a photograph of purchase order 3236. What is that?

“A. This is the purchase order for that flat strip of rubber  $1\frac{1}{2}$  by 5, which we cut to special length and made the vanes similar to that illustrated on B-1-567.

“Q. And the reason that you have a photograph of the order is because you have destroyed the records, you previously testified?

“A. Yes, these are from our microfilm record.”

Mr. Mellin: That photograph is offered in evidence at this time, your Honor.

The Court: All right.

The Clerk: The photograph is marked in evidence as Exhibit Z, and the drawing is marked as Exhibit AA.

(The documents referred to were marked Defendant's Exhibits Z and AA, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: (Continuing reading):

“Q. Go ahead, Mr. Kennison.

“A. This rubber was used, but it had a very poor [159] fit in forming it into a U-shape.

“Q. That is, into the socket which held it?

“A. Into the socket of the hub assembly. Pipe were made with this mechanism, but we found that due to centrifugal force, one leg of the extended U would extend and the other would come in, due to

(Deposition of Hugh Foster Kennison.)

difference in weight of each of the arms of the U. As a result, this was redesigned. Drawing B-4-129, dated December 6, 1946, illustrates an extruded rubber shape for rubber vane coating brush. This was designed so that it could not be dislodged due to centrifugal force. And it was a pre-formed shape as opposed to our earlier attempt at rubber vanes.

"Q. Was that actually built?

"A. This was actually built and used.

"Q. And used on a Brend type of machine, of the type we have been discussing?

"A. Yes.

"Q. And did it operate satisfactorily, except for wear, if it did not operate satisfactorily for that purpose?

"A. It operated well enough to make several pipe. We did realize at that time, though, that again centrifugal force was stretching the rubber and we were getting some interference. At that time we discussed [160] putting reinforced wire mesh in this extruded shape. But this was never actually tried.

"Q. And approximately when were those brushes built and used, if you know, Mr. Kennison?

"A. They were designed in December of '46, and tests were conducted sometime after that date, but prior to March of 1947.

"Q. Now, I show you what appears to be a bill dated March 3, 1947, on the letterhead—or billhead of the Manhattan Rubber Manufacturing Division. Can you explain what that is for?



(Deposition of Hugh Foster Kennison.)

“A. Yes, this is the bill from Manhattan to Lock Joint for the cost of the die and the curing form to produce the section described in drawing B-4-129.”

Mr. Mellin: I offer that in evidence, your Honor.

The Court: It may be received.

The Clerk: Exhibit AB.

Mr. Mellin: I also offer the drawing B-1-567 and B-4-129.

The Clerk: AC and AD in evidence, your Honor.

The Court: All right.

(The documents referred to were marked Defendant's Exhibits AB, AC and AD, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: (Continuing reading):

“Q. What was your ultimate conclusion, if you [161] arrived at any, with respect to the use of rubber-coated drums of the types you have mentioned as compared with the wire brushes that you were using?

“A. We felt that the cost of brush per cubic yard of mortar placed was more or less the same. At the same time, we were negotiating with several of the larger wire brush manufacturers for improved quality and price reduction, due to our quantity use of the brushes. This negotiation with the wire brush people was successful, so we concluded our experiments on the presumption we could get cheaper placement of mortar by using steel brushes, as well as that we felt the brush



(Deposition of Hugh Foster Kennison.)

people could produce in the future cheaper and better brushes for this particular use.

“Q. Was there any difference in function of actually spraying the concrete on the pipe as between the rubber brushes that you referred to and steel brushes?

“A. No, they were more or less similar.

“Q. And one didn't spray the material any better or any faster than the other; is that what I understand by that answer?

“A. Well, on some pipe we did notice that the rubber brush gave a slightly smoother coating. However, it had more rebound, that is, more mortar was thrown through the brushes, but did not land on the pipe, only on the floor. [162] This was wasted and was contributing to the high cost of rubber brush per mortar placed on a pipe.

“Q. Did you at any time have the experience, using the rubber brushes, of a piece of aggregate or larger piece of solid material going between the brushes?

“A. Yes, occasionally hardened pieces of mortar would get mixed in with the mortar and be discharged through the brushes. With the rubber brushes there was little clearance or flexibility and the rubber was chewed up, hunks of rubber removed from the brush.

“Q. Did you ever have that happen with wire brushes? “A. Yes.

“Q. What happens?

“A. The wire just parts, the material goes

(Deposition of Hugh Foster Kennison.)

through and the wire is not damaged—the wire brush is not damaged.

“Q. Now, ever since that time, that is, since 1946 or 1947 you have continuously used machines having brushes for this same function and purpose?

“A. Yes.

“Q. And, as I understand it, you have about 15 of them with counter-rotating brushes in operation at this time.

“A. More or less. [163]

“Q. And they all use wire brushes, do they, or brushes of some other character?

“A. They all use wire brushes. In the past few years, we have had a few with steel vanes, using a similar principle to that shown on drawing——

“Q. B-1-567?

“A. Yes, B-1-567. ——excepting they are fixed steel fins, counter-rotating.

“Q. Do they work satisfactorily or not?

“A. They have been used on several jobs, but it is felt that the wire brush is more economical due to proper balance. The steel vanes have to be constantly kept in balance.

“Q. Now, I hand you two photographs, and would you tell us what they depict, please?

“A. These photographs were taken during 1942 and illustrate the first use of the Brend Coating Machine for coating pipe on a water pipe line contract. This contract was for the City of Hyattsville, Maryland. The pipe plant was erected in or near

(Deposition of Hugh Foster Kennison.)

Hyattsville. It is pre-stressed pipe, 30" diameter. It is recognized, and the job is of historical note, because it is the first pre-stressed pipe line built in this country.

"Q. And that machine depicted in those photographs is substantially the same, except in minor details, with [164] the Brend Patent, which we have been referring to?

"A. Almost identical."

Mr. Mellin: I offer those two photographs as the next exhibit, your Honor.

The Court: Just a minute. We might as well hold the rest until morning. Let me take a look at it?

Mr. Mellin: We have about a half a page to go.

The Court: All right. Then we will finish.

The Clerk: Those exhibits are already marked. They are Exhibits AC and AD in evidence. Those are the ones that I have already marked.

The Court: They may be received.

Mr. Mellin: (Continuing reading):

"Q. Are you familiar generally with the Earnshaw Patent, No. 2,168,329?      "A. Yes.

"Q. And how did you become familiar with that, generally?

"A. The Lock Joint Pipe Company has an agreement with Earnshaw for the use of a machine employing a belt feed for placing mortar on a pipe.

"Q. And prior to August of 1956, did you ever build any such machine?      "A. No.

(Deposition of Hugh Foster Kennison.)

“Q. That license agreement that you refer to, did [165] that call for payment of unit royalty, if you know?

“A. Yes, I believe there was an annual payment.

“Q. If you used the machine, did it call for a royalty of so much per square foot?

“A. Yes, so much per foot or square foot.

“Q. Did you ever make any machines on which you paid royalties to Earnshaw? “A. No.

“Q. And you only paid him this hundred dollars a month minimum that you referred to?

“A. Well, the minimum, whatever it was.”

Mr. Mellin: Now, the Earnshaw patent was offered next, your Honor, and that is already in evidence.

The Court: All right.

Mr. Mellin: And that concludes the deposition.

The Clerk: Now, for the record, your Honor——

The Court: Let's complete the record. That goes very much faster that way, Mr. Mellin, when you use another person instead of having the same person read the questions and answers.

You may step down.

The Clerk: All Defendant's Exhibits from M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC and AD have been identified and admitted in evidence.

The Court: All right. [166]

Mr. Mellin: I didn't count those, Mr. Clerk. Are there seventeen of them?

The Clerk: You removed some of them.

Mr. Mellin: I removed two. The original number was nineteen.

The Clerk: I will count them.

The Court: I think this is a good stopping point, gentlemen. We have made very good progress, and I will read the deposition of Mr. Earnshaw.

The Clerk: There is a drawing here, Mr. Mellin.

Mr. Mellin: That has not been marked. The trouble came on page 16, I think, of the deposition.

The Clerk: There is a drawing here that was not numbered.

Mr. Mellin: May I offer that, your Honor? That is drawing B-1-567. May I offer that as our next exhibit in order?

The Court: It may be received.

The Clerk: AE, identified and admitted in evidence.

(The document referred to was marked Defendant's Exhibit AE, and received in evidence.)

The Court: All right. Then, gentlemen, we will recess until 10:00 o'clock tomorrow morning.

(Whereupon at 4:42 o'clock p.m., Tuesday, March 26, 1957, an adjournment was taken until 10:00 o'clock a.m., Wednesday, March 27, 1957.) [167]



Wednesday, March 27, 1957. 10:00 A.M.

The Clerk: Case No. 20040-Y Civil, Spencer A. Earnshaw versus American Pipe and Construction Company. All parties present, your Honor.

The Court: Gentlemen, before we proceed I want the record to show that since yesterday I have read the deposition of Mr. Earnshaw, and it did not differ in many respects from what he testified to here, except counsel tried to pin him down to the meaning of the claims, and, of course, he not being an engineer, stated frankly what he thought he was going to accomplish.

I have also looked at the large drawings which were introduced in conjunction with the examination of Mr. Kennison, which I did not have a chance to do yesterday.

So now we will proceed from there.

Mr. Wright: At this time I want to offer in evidence, your Honor, an exhibit which was offered for identification, but which I apparently forgot to offer in evidence, Plaintiff's Exhibit 11. It was just an oversight on my part.

The Court: It may be received.

The Clerk: Plaintiff's Exhibit 11 now in evidence.

(The exhibit heretofore marked Plaintiff's Exhibit 11 was received in evidence.)

Mr. Mellin: Mr. Butler. [169]

ADOLPH G. BUTLER

called as a witness on behalf of the defendant, having been heretofore duly sworn, testified further as follows:

The Clerk: Adolph G. Butler, heretofore sworn, resumes testimony.

The Court: That lasts for the trial. You are sworn once, and it lasts for some times three months afterwards.

The Witness: This is a new experience for me.

Direct Examination

Q. (By Mr. Mellin): You are the A. Butler who previously testified in this case?

A. Yes, I am, sir.

Q. Now, at American Pipe and Construction Company, who was in charge of the design of the building of the Brend machines starting, as you say, in 1942?

A. I was in charge of most of the construction and designing.

Q. Did that continue right up through, and is still the same fact?

A. Yes, up until last year. Last year I was removed from direct control.

The Court: If you will lean back, Mr. Butler. Were you in the Army in the first World War?

The Witness: No, I was not. [170]

The Court: They used to have an expression there to make somebody feel at ease. They would say, "Lean back, take a deep breath, and say 'Ah.'" That relaxes you, so you do that now.

(Testimony of Adolph G. Butler.)

The Witness: Thank you.

The Court: All right.

Q. (By Mr. Mellin): Now, these machines, these Brend machines were built from drawings supplied you by Lock Joint, you testified?

A. They were.

Q. Is there any direct connection between Lock Joint and American Pipe and Construction Company?

A. Not a direct connection.

Q. You are competitors, as a matter of fact?

A. Yes.

Q. I show you these drawings, and ask you if these are the remainder of the drawings upon which those machines were built? Will you identify them by date and number?

A. By which?

Q. Identify them, first. Are those the drawings from which the Brend machines were built?

A. Yes, they are.

Q. Will you identify those drawings by date and number, Mr. Butler? [171]

A. Do you want the drawing number first, or the date first?

Q. It does not make any difference.

A. Drawing B-1-420, dated 3-16-42.

This other number has been smudged. Drawing B-1-4—it looks like—15. It is dated 2-4-42.

Drawing B-1-413, dated 1-23-42.

Drawing B-1-414, dated 1-27-42.

Drawing B-1-412, dated 1-23-42.

The Court: I didn't hear when you gave us the

(Testimony of Adolph G. Butler.)

date of those. As I understand it, the drawings and the blueprints usually carry a notation as to when they were made. Do those carry such?

The Witness: Yes, I am giving you the date, too.

The Court: What?

The Witness: I am giving you the date, too.

The Court: Oh, I didn't catch that.

Mr. Mellin: 1942, your Honor.

The Court: 1942. All right.

The Witness: I am giving—rather than the month, I am giving the number for the month.

The next drawing is B-1-416, dated 2-7-42.

Mr. Mellin: May I offer those drawings in evidence as one exhibit, your Honor?

The Court: All right. They may be received.

The Clerk: Defendant's Exhibit AF.

(The documents referred to were marked Defendant's Exhibit AF, and received in evidence.)

The Witness: There are two more drawings here. [173]

\* \* \* \* \*

Q. (By Mr. Mellin): I show you an enlarged photograph, which is marked "A," for identification, Mr. Butler. Would you state what—

A. There are two drawings that were not listed there on that exhibit.

Q. Didn't you list them?

A. There were two that fell out.

(Testimony of Adolph G. Butler.)

Q. Will you list them, please? Would you identify those other two drawings, Mr. Butler?

A. Yes, I will. It is drawing B-2-715, dated 3-5-42, and drawing 4-2987-2, dated 2-11-43.

Mr. Mellin: May those two be included in the other exhibit? They are a part of it.

The Clerk: In Exhibit AF.

The Court: All right. They may be received.

The Clerk: Now in evidence.

Q. (By Mr. Mellin): Will you refer to the large photograph that I handed you, Mr. Butler, and will you tell us, please, whether that accurately depicts the Brend machine built by American Pipe in 1942 and right up to the present time, disregarding the material from which the brushes are made?

A. Yes, it does. Except for the shaft sizes and the power, it is the identical machine. [177]

Q. And would that be typical of all of the Brend machines built by American?

A. Yes, it is. In fact, we have to number it to tell the difference.

Q. Now, these brushes, the wire brushes that were used in these Brend machines and are still used in some of them, what is the character of the peripheral surface of those brushes?

A. The surface of the brushes is very resilient, and is able to deform when it comes in contact with the material, and return that energy to the material when it leaves the brushes.

Q. Will you explain that a little further, the reason for the resiliency?



(Testimony of Adolph G. Butler.)

A. The wires in the brush are virtually a spring, and can very easily be deformed, and as they deform they store the energy necessary to——

Q. Does that have a greater or a lesser degree of resiliency than the rubber brushes you are using?

A. It is difficult to tell the difference.

Mr. Mellin: I will offer the photograph identified as Exhibit A in evidence.

The Court: It may be received.

The Clerk: Exhibit A now in evidence.

(The exhibit heretofore marked Defendant's Exhibit A was received in evidence.) [178]

Q. (By Mr. Mellin): In the machine that American makes, the Brend machine, is there any movement in operation permitted between the shafts, or the brushes, or that the brushes may move apart, or together?

A. No, they are held rigidly in line.

Q. There is no shock absorber permitting the shafts to move at all?

A. Not at all.

Q. Are you familiar with the Brend patent that we have been referring to?

A. Yes, I am.

Q. I show you an enlargement of a drawing of that patent, which is Patent No. 2,380,499, Mr. Butler,——

A. Yes, sir.

Q. ——and I will hold it up for you, and I will ask you if the machine in Exhibit A, which is the Brend machine, has the hopper 75?

A. It surely does.

Q. Would you mark it with your pen? Do you have a pen?

(Testimony of Adolph G. Butler.)

The Clerk: A red pencil,—here you are.

The Witness: I have both.

Q. (By Mr. Mellin): “75”? A. Yes.

Q. And those two hoppers are for the same or a different purpose? [179]

A. The same purpose.

Q. Does it have a throat 61 leading from the hopper toward the brushes?

A. Do you want me to mark this drawing?

Q. We will mark the photograph. Does it have such a throat?

A. This is 61 (indicating).

Q. Would you mark the photograph with 61?

A. Yes, I will.

Q. Now, the photograph does not show it, but would you state whether or not there is in that throat a helical screw for feeding the material from the hopper to the brushes?

A. Yes, there is.

Q. Will you mark that, please? A. Yes.

Q. Now, does it have two shafts 12 and 13 for the brushes? A. Yes, it does.

Q. Will you mark that?

A. 12 is the lower?

Q. 12 is the upper shaft, and 13 is the lower.

(The witness marks the exhibit referred to.)

Q. And does it have two brushes 10 and 11?

A. Yes, it does.

Q. All right. Will you mark on the photograph 10 and 11? [180]

(Testimony of Adolph G. Butler.)

(The witness indicates on the exhibit referred to.)

Q. Now, do those brushes, the throat, the feed screw and the hopper operate the same in the Brend machine shown in the photograph, as in the patent here?

A. They operate exactly the same.

Q. Now, is there a means for driving the brushes in the Brend patent?

A. Yes, there is.

Q. That is the chain 38, and its related sprockets?

A. Yes, it is.

Q. And is there a means in the photograph for doing the same thing?

A. Yes, there is.

Q. And those are the belts that you have just marked?

A. The double V-belts, yes, sir.

Q. Is there any difference between using a belt and a chain?

A. Outside of the lesser wear on the belt than there is on the chain, no.

Q. Is there any difference in the operation of the elements which you have just referred to in the patent than there is in the machines which you built?

A. None whatsoever.

Q. In the patent the machine is mounted on a truck [181] for movement along rails. Is that true of the machine shown in the patent?

A. It surely is.

Q. And is the pipe rotated that is being

(Testimony of Adolph G. Butler.)

brushed by the use of the Brend machine by American as it is in the patent or not?

A. This is rotated—ours is rotated on spindles rather than on trunnions.

Q. Is the operation different?

A. The operation is exactly the same.

Mr. Mellin: Thank you.

The Clerk: Do you care to mark that, Mr. Mellin?

Mr. Mellin: I will offer it in evidence, your Honor.

The Court: It may be received.

The Clerk: Defendant's Exhibit AG.

Mr. Mellin: This is a photographic enlargement of the drawing of the Brend patent 2,380,499.

(The document referred to was marked Defendant's Exhibit AG, and received in evidence.)

Q. (By Mr. Mellin): Now, reference was made to the fact that the rubber rollers or rubber brushes in the Brend machines used by American are grooved or treaded. What is the significance of that grooving or treading, if any?

A. It simply gives a little bit more resilience, able to take care of a little more of the resilient [182] material, and reduces the wear possibly slightly.

Q. Did you ever try smooth rubber rollers?

A. Yes, we have.

Q. How do they operate?

(Testimony of Adolph G. Butler.)

A. They operate just as well, except a slightly greater amount of wear.

Q. Now, was it ever incumbent upon you to investigate the possibilities of using a belt machine, or converting a belt machine for plastering walls into a machine for coating pipe?

A. Yes, we spent considerable time on that.

Q. And what were your conclusions, Mr. Butler?

A. We concluded it was impractical because of the difficulty involved in the uniform feeding of material onto the belt.

Q. What do you mean by that? Will you explain that just briefly, a little more fully?

A. In order to coat the pipe properly, the feeding of the aggregate to the pipe has to be very uniform. The material, as it comes from the mixer, has inclusions of air and various other resultant particles in it to reduce those particles to a uniform mass and feed it uniformly on the belt is what caused the difficulty, and we finally abandoned the use of it.

Q. And you decided it was impractical, did you?

A. Impractical.

Q. And that is why one was never built?

A. Yes, sir.

Mr. Mellin: That is all.

The Court: Cross examine.

Mr. Wright: No cross examination.

The Court: All right. Step down, Mr. Butler.

(Witness excused.)

Mr. Mellin: Mr. Jenkins.



FRED F. JENKINS

called as a witness on behalf of the defendant, having been heretofore duly sworn, testified further as follows:

The Clerk: Mr. Fred F. Jenkins, heretofore sworn, is called to testify.

Direct Examination

Q. (By Mr. Mellin): You are the Fred Jenkins who previously testified in this litigation?

A. I am.

Q. Now, you heard Mr. Earnshaw testify as to a considerable number of conversations with a Mr. Jenkins. Are you that Mr. Jenkins?

A. No. I was in, I believe, three times. [184]

The Court: Well, who is he? Is he the Jenkins, regardless of the number?

The Witness: Oh, I see.

The Court: If there is another, it may be a brother.

The Witness: He did testify I was at one.

Q. (By Mr. Mellin): In one. But he referred to other conversations with another Mr. Jenkins. Are you that Mr. Jenkins? A. That is correct.

Q. You misunderstand me. He testified as to conferences relating to entering into this license agreement. Are you that Mr. H. H. Jenkins?

A. No, I am not.

Q. That Mr. Jenkins was your brother?

A. That is right.

Q. And he is now deceased?

A. That is right.

(Testimony of Fred F. Jenkins.)

Q. He also referred to conversations with a Mr. McAdam? A. That is right.

Q. And Mr. McAdam is likewise deceased?

A. That is right.

Q. Now, you were at Mr. Earnshaw's place of business or residence at one meeting, were you not?

A. That is right. [185]

Q. And why did you go there, Mr. Jenkins?

A. I went out to see a perpetual motion machine that he had that I was interested in.

Q. At his solicitation? A. That's right.

Q. And at that time did you see any tires arranged on a wall in any fashion with rubber rollers? A. I don't remember, no.

Q. Was Mr. Butler with you? A. He was.

Q. Do you know whether or not at that time at that meeting those tires were demonstrated to Mr. Butler?

A. Yes, I do, because on the way home he stated to us that he had seen——

Mr. Wright: I object to any conversation between Mr. Butler and this witness as hearsay.

Q. (By Mr. Mellin): Don't state the conversation. Did he tell you at that time that he had seen them? A. That's right.

Q. And do you know whether or not that was before or after American started to work with rubber? A. That was afterwards.

Q. Now, you were present at a conference with Mr. Earnshaw and one of his attorneys?

A. That is right. [186]

(Testimony of Fred F. Jenkins.)

Q. And what position did American take as to Mr. Earnshaw's demands at that time?

Mr. Wright: I object to that in that form. He can state what was said.

The Court: Yes, I think that calls for a conclusion.

Mr. Mellin: I was only trying to shorten it, but I will get at it another way.

Q. You state what was said, in substance.

A. His attorney wanted to know our position so far as Mr. Earnshaw's patent on the rubber rollers, and we took the stand that in our agreement it was excluded from the agreement, that it was a part or an improvement on the Brend machine, and not on the machine that we were licensed with Mr. Earnshaw.

Q. And did you ever change that position, as far as Mr. Earnshaw was concerned, Mr. Jenkins?

A. Not that I know of, no, sir.

Q. Did you ever have a subsequent conference with Mr. Earnshaw?      A. I did.

The Court: Let's find out the date. Now you are talking about a conversation, and let's find out the date.

Q. (By Mr. Mellin): All right. When was this second conversation?

A. It was after his attorney was there. I can't place the date. [187]

The Court: You mean J. E. Simpson?

The Witness: That's right.

Q. (By Mr. Mellin): You had a conversation

(Testimony of Fred F. Jenkins.)

with Mr. Earnshaw, and where did that take place?

A. In my office.

Q. Was anything said about another demand by Mr. Earnshaw?

A. Yes. Mr. Earnshaw claimed that we owed him money, and Mr. R. V. Edwards come into my office, and at that time made the offer of \$50.00 a month for ten years as a nuisance value of getting this thing settled, so that we wouldn't have to go to court.

The Court: Let me interrupt there. Give me that letter from Simpson. Was that prior to the letter from Simpson? I think Simpson attempted to summarize the conversation, didn't he?

The Witness: That's right.

Mr. MacDowell: Mr. Clerk, I think that is Exhibit H.

The Clerk: I have it.

The Court: Now, the letter from Simpson is dated July 20, 1955. The conversation was prior to that time?

The Witness: No, this last conversation was after that, as I remember it.

The Court: All right. Go ahead. I merely wanted to relate the one to the other. [188]

Mr. Mellin: You may cross examine.

The Court: Now, on this, let me ask you this, so long as he is talking about it. This is addressed to Mr. Edwards?

The Witness: That is right. He is president of the company.

(Testimony of Fred F. Jenkins.)

The Court: Now, he states this:

“On behalf of Mr. Earnshaw I am hereby advising you that we now understand that it is American’s position that Earnshaw’s patent No. 2639943 is not included within the License Agreement between American and Earnshaw dated February 8, 1944; that American does not claim, assert or understand that the said patent No. 2639943 is an improvement upon the Earnshaw patent No. 2169329, the subject of the said License Agreement, and further that Mr. Earnshaw is now and at all times since the refusal of American to pay the costs of patenting the latter patent has been, free to license others to manufacture, use and sell apparatus coming within the metes and bounds of Earnshaw’s patent No. 2639943.”

Is that a correct summary of the position, so far as it was expressed, at the conference at which you were present?

The Witness: That is right.

The Court: All right.

The Witness: I believe there is a letter that Mr. Edwards answered this, and made that statement later. [189]

Mr. Mellin: That is all.

Mr. Wright: May I see that letter, Mr. Clerk, the other letter?

The Clerk: The letter from Mr. Edwards?

Mr. Wright: To Mr. Simpson.

(The document was handed to counsel.)



(Testimony of Fred F. Jenkins.)

Cross Examination

Q. (By Mr. Wright): Do you know the date that you went out there to look at the perpetual motion machine, Mr. Jenkins?

A. No, I don't. It was——

Q. Was your brother along, too?

A. He was.

Q. And Mr. Butler? A. That's right.

Q. You didn't have anything to do with the construction of this machine, what you call the Brend machine, out there, did you, at American?

A. Well, in a general way. At that time I was general superintendent for the company.

Q. You haven't any way of fixing the date when the rubber was first applied to the brushes or rollers there at American?

A. No, only from the drawings.

Mr. Wright: That is all. [190]

Mr. Mellin: That is all.

The Court: All right.

(Witness excused.)

Mr. Mellin: At this time, your Honor, I would like to offer in evidence a copy of a letter of August 9, 1956, from American to Earnshaw, giving formal notice of termination of the agreement at the expiration of the patent that was referred to.

The Court: All right.

Mr. Wright: That is patent '329.

Mr. Mellin: That is patent '329.

The Court: The patent as to which the agreement specifically refers?

Mr. Mellin: Yes.

The Court: Or I should say the patent to which the license explicitly refers?

Mr. Mellin: That is correct, yes, your Honor.

The Clerk: A letter from American Pipe to Earnshaw identified and admitted in evidence as Defendant's Exhibit AH.

(The document referred to was marked Defendant's Exhibit AH, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: And a carbon copy of a letter from J. Marion Wright, dated August 24, 1956, responding to it.

The Court: All right.

Mr. Mellin: And another letter from Mr. Wright subsequent [191] to that time, containing the same thing, dated August 27, 1956.

The Court: They may be received.

The Clerk: A letter dated August 24, 1956, J. Marion Wright to American Pipe, is marked and introduced in evidence as Defendant's Exhibit AI.

A letter dated August 27, 1956, J. Marion Wright to American Pipe, introduced in evidence and identified as Exhibit AJ.

(The documents referred to were marked Defendant's Exhibits AI and AJ, and received in evidence.)

[See Book of Exhibits.]

Mr. Mellin: At this time, your Honor, I would like to offer in evidence a book of prior art patents, and I am not going to insult the court's intelligence

by having somebody attempt to explain them to you.

The Court: Is that the list?

Mr. Mellin: That is the list.

The Court: These are the ones that you noticed?

Mr. Mellin: Some of them, your Honor, are those which are in that list of identification. May I read the numbers?

The Court: February 21, 1957 has a list.

Mr. Mellin: That is correct, your Honor.

The Court: Have you got any more?

Mr. Mellin: No, no additional ones. In fact, actually we didn't use all of those.

May I read the numbers and names into evidence, your Honor? [192]

The Court: Yes.

Mr. Mellin: Clow Patent 15,280, July 8, 1856.

Willoughby, No. 21,102, August 3, 1858.

Mr. Wright: Before they are numbered, I am going to object to them, your Honor, on the ground they are not relevant at this time, and on the ground they are immaterial on the ground of prior art, that we haven't gone into that yet.

The Court: Well, he is offering them.

Mr. Wright: Is he putting on his defense?

The Court: Certainly. We do not split the two. He is putting it on. That is what I said from the beginning. All this is directed both to his Answer and to the Counterclaim, and then you will have the last say.

Mr. Wright: That is all I wanted to know.

The Court: Yes, that is right. We don't repeat

it. We don't draw a line and close the evidence as to one and then start the other. You will have the rebuttal on your cause of action and Complaint, and then also anything additional you want to offer on his Counterclaim.

Mr. Mellin: I did not repeat anything with Mr. Jenkins and Mr. Butler that they testified to yesterday on that same subject.

The Court: No, that is right. I guess Mr. Wright just did not understand. All right, proceed. [193]

Mr. Mellin: Riedel, 250,976, December 13, 1881.

Brend, 2,368,742, and I reoffer the other Brend patent on the question of anticipation, your Honor.

The Court: All right.

Mr. Mellin: That is 2,380,499.

Barker, 2,451,603, October 19, 1948.

Hamill, 2,530,767, November 21, 1950.

Colburn, May 1, 1951, filed December 9, 1946, No. 2,550,781.

Rerick, — if your Honor please, that one I will withdraw because of its date.

Devlin, filed April 16, 1947, No. 2,567,699; and Wilson, July 15, 1952, No. 2,603,383.

I will offer those in evidence, your Honor.

The Court: All right. They may be received.

The Clerk: That has been identified as Defendant's Exhibit AK, and received in evidence.

(The documents referred to were marked Defendant's Exhibit AK, and received in evidence.)

[See Book of Exhibits.]

The Court: There is one that isn't in that list. You have eliminated some?

Mr. Mellin: That is correct, your Honor, I eliminated some.

The Court: All right.

Mr. Mellin: The defendant rests. [194]

The Court: Gentlemen, we will take a short recess, and then I will hear any additional testimony the plaintiff desires to present.

(A short recess.)

The Clerk: All parties present, your Honor.

Mr. Brown: Mr. Daugherty, will you take the stand?

ROBERT L. DAUGHERTY

called as a witness on behalf of the plaintiff in rebuttal, having been first duly sworn, was examined and testified as follows:

The Clerk: What is your full name, sir?

The Witness: Robert L. Daugherty, D-a-u-g-h-e-r-t-y.

Direct Examination

Q. (By Mr. Brown): State your occupation and residence, please.

A. My occupation at the present moment is, I am a member of the Air Pollution Hearing Board of the County of Los Angeles, but for the past 36 years until now I have been head of the Department of Mechanical Engineering at the California Institute of Technology. I am also a registered professional mechanical engineer in the State of California, No. 514.



(Testimony of Robert L. Daugherty.)

Q. Have you appeared as an expert in patent cases before? [195]

A. A number of times.

Q. Have you read, and do you understand the patents which have been issued to Mr. Earnshaw here, the plaintiff, numbered as to the last numbers '329, '943, '942 and '725, and marked as Exhibits 2, 5, 6 and 7? I will ask the clerk to show them to you.

A. Yes, I have read the Earnshaw patents to which you have referred.

Q. Will you please state what to you Exhibit 2 of Earnshaw discloses?

A. Exhibit 2 discloses a plastering machine, as it is named, in which the material is carried up to the point of application on a moving belt, and is then thrown off of the belt as the belt runs around a relatively small roller at the end.

Q. Now, referring to Exhibit 5, Plaintiff's Exhibit 5; will you please state what to you that patent discloses?

A. That patent shows a pair of rollers with the material going through the rollers, and then being thrown off from the rollers at relatively high velocity to impinge on any surface.

Q. How is the material fed to the rollers?

A. It is carried up to the rollers by means of a belt conveyor in one case, and I believe by a screw conveyor in one of the other views. [196]

Q. Now, what does the Earnshaw patent, Exhibit 6, No. '942, disclose?

(Testimony of Robert L. Daugherty.)

A. Exhibit 6, '942, shows a number of impellers that are in parallel position that throw off the material.

Q. And Exhibit 7, what does that disclose?

A. Exhibit 7 shows a belt drive and the impeller blades.

Q. For what?

A. For the purpose of carrying material and throwing it off onto some surface.

Mr. Brown: Now, the defendant has introduced into evidence an exhibit here by way of a book exhibit, and may the witness have the exhibit?

The Clerk: Defendant's Exhibit AK.

(The document was handed to the witness.)

Q. (By Mr. Brown): I will ask you to refer in that book to a patent that has already been introduced into evidence as Defendant's Exhibit B, the patent to Brend. That is No. 2,380,499, and preliminarily I will ask you to glance through that exhibit book, Exhibit AK, and state whether or not you have heretofore read, examined and understand the patents that appear in that exhibit?

A. I have.

Q. Very well. Now, as to the Brend patent, No. '499, the last numbers, will you please state what that patent [197] discloses to you?

A. This discloses a pair of rollers which are equipped with brushes, and the brushes are practically in contact with each other, and the material is fed into the rollers, and the brushes pick it up and throw it out on to some surface.

(Testimony of Robert L. Daugherty.)

Q. You say they are brushes?

A. That is what the patent states.

Q. Can you give me a definition of a brush?

A. Well, a brush would consist, as I say, of a number of, say, bristles or some substance of that character that is inserted into some supporting surface.

Q. Bristles of any material?

A. Any material could constitute a brush. It could be fibre, it could be wire, it could be almost anything, so long as they are small and relatively flexible material that supports them.

The Court: Suppose it was solid and achieved the same purpose of being able to wipe a surface. Suppose they were made like some of these new mops are made, or something of that order, or of rubber. Would you still consider it a brush?

The Witness: No.

The Court: In other words, the word "brush" is used as in the ordinary dictionary meaning, is it?

The Witness: That's right. It would mean a lot of separate [198] bristles of some material.

The Court: All right.

Q. (By Mr. Brown): Then in the exhibit before you the brush, whatever that exhibit is——

The Clerk: Exhibit I.

Q. (By Mr. Brown): Would you term that a brush?        A. Yes, that is a brush.

Q. What about the other exhibit?

The Clerk: Exhibit J.

(Testimony of Robert L. Daugherty.)

Q. (By Mr. Brown): Would you term that a brush?     A. No.

Q. Why not?

A. Because it doesn't have these separate flexible elements that are supported at one end, and with some supporting material.

Q. Now, referring to the exhibit book which you have before you, I believe the first patent that appears therein is a patent to Clow, No. 15,280. Is that correct?     A. Yes.

Q. What does this patent disclose to you?

A. That shows a rotary pump for pumping some kind of a fluid. It could be a liquid, it could be theoretically a gas. But this is intended, I think, to pump a liquid.

Mr. Brown: Would the court care for the exhibits?

The Court: I beg pardon? [199]

Mr. Brown: Would you care for the exhibits, your Honor?

The Clerk: Exhibit AK.

The Court: That is all right. I can follow it.

Mr. Brown: Thank you.

The Court: I can follow it without looking at it.

Q. (By Mr. Brown): Now, how does this particular pump work, as disclosed in the patent?

A. I beg pardon?

Q. How does this particular pump work, as disclosed in the patent?

A. This pump shows two lobe-like members that are rotated in opposite directions, and they are en-



(Testimony of Robert L. Daugherty.)

closed within a case with some space left, so that at times the space is open to the suction side of the device, and then that is shielded off as this lobe-like element rotates, and the material in the confined space is carried around to the opposite side, where it is released into a discharge pipe, and in this case case here leakage from the discharge to the suction side is hindered, not altogether stopped, but hindered by relatively close contacts between the moving parts and the stationary frame within which it is mounted.

Q. And what is the function of the rubber on the members A, the cams or pistons?

A. Well, the purpose of the rubber is to effect a shield to prevent the leakage from the high pressure to the [200] low pressure side without having undue friction.

Q. In your opinion, would it be possible to substitute the two cams A, so termed in the patent of Clow, for the brushes of Brend, as shown in Figure 2 of the Brend patent, Exhibit B?

A. No, they have no similarity in function, in my opinion.

Q. In Brend which way is the material, the plaster or the final divided material directed?

A. The material passes between the two rollers.

Q. And is that true of the fluid in the patent to Clow?

A. Not at all. No fluid is supposed to pass between the two rollers, but on the opposite sides of the point of contact with each other. [201]

\* \* \* \* \*



(Testimony of Robert L. Daugherty.)

The Court: All right.

Q. (By Mr. Brown): Now, take the patent to Barker, No. 2,451,603, and will you please comment upon the operation of this patent?

A. Barker '603 is another type of a rotary pump, where again we have two elliptical shaped lobes that make contact with each other, but the material is confined in spaces on the opposite sides from the points in contact, and is physically carried from one side to the other.

Q. And not straight through as taught in Brend?

A. No, not straight through at all. Between the two there is supposed to be no flow whatsoever between each other if the leakage were absolutely stopped, as it theoretically is supposed to teach.

The Court: In these devices the word has been introduced, I like it, and it is a good Latin expression "extrude." The object of all of these is to extrude liquid or semi-liquid substance, whether paint or cement, and to apply it to a surface; is that right?

The Witness: I think practically all of these rotary pumps are used for pumping liquids or gases. Primarily, in actual practice either oil or air.

As a matter of fact, the Patent Office informed me some time ago that something like two or three thousand patents had been granted on rotary pumps and compressors of this [203] general type, and very few of them have had any commercial success, because all such devices suffer from one or two

(Testimony of Robert L. Daugherty.)

evils, either they are so tight that they don't have much leakage, and, therefore, have excessive friction, or else the parts are loose fitting, so that they don't have much connected friction and have high leakage loss.

These two devices only differ from any of the others in that they have rubber to make contact, which tends to minimize the leakage without causing the excessive friction, and that is the purpose of all of those in evidence in this case.

The Court: All right.

Q. (By Mr. Brown): It prevents leakage, and is there for the purpose of preventing excessive friction, and that is the purpose of the rubber in these pump patents? A. Yes.

Q. Taking the next patent to Hamill, No. '767, will you please comment on this particular structure, Mr. Daugherty?

A. Well, Hamill shows a rotary pump, but unlike the other two, this is a gear-tooth type, where we have just a pair of gears with the teeth meshing with one another, and again the teeth, when they are enmeshed, are supposed to prevent leakage between the two, but again the material is carried down in the interspaces between the teeth along on the [204] opposite sides of the points of contact, and these teeth are shown here as being coated with rubber, for the purpose I have just previously mentioned, that it will enable them to make relatively close contact without at the same time introducing friction. In other words, the rubber, being some-

(Testimony of Robert L. Daugherty.)

what elastic, serves somewhat the same purpose in all these rotary devices where it is employed as do the piston rings in a piston in a reciprocating machine, such as in an automobile engine, and so on.

Q. Now, in your opinion, could you apply either the Hamill gear-tooth pump structure, or the Barker structure in either the Brend structure, Defendant's Exhibit B, or the Earnshaw structure in place of the parts of the rollers shown?

A. No, because any material that is the least bit abrasive would wear these parts out in such a short time that it would be absolutely impractical. These devices can be used only for clear liquids or clean air, and operate successfully as a rule only with something like oil, which acts as a lubricant.

Q. Do they function in the same manner as the process of the Earnshaw patent or the Brend patent?

A. No, not at all.

Q. It could not be used in either of those two cases?

A. Not at all. [205]

Q. Now, the patent to Colburn, '781, would you please state what this patent discloses?

A. This shows a device to feed concrete aggregate, and there we have a large rotating disc that has vertical cylindrical holes through it, and when those vertical cylindrical holes come opposite to an opening up above into a hopper, the concrete aggregate will drop down through that and pass into a space below, where a gear device here with teeth on it, made of rubber to minimize wear, will carry it out to some point of application.

(Testimony of Robert L. Daugherty.)

This is somewhat unlike the gear pumps we talked about, because it is merely to transfer some material and not to develop a pressure between one side and the other, so the leakage is not really a problem to any great extent.

This also shows, to effect a shield between this rotating disc and the stationary hopper above and the stationary plate below, there are rubber gaskets, I would call them, which will again afford somewhat of a shield without causing undue friction.

Q. How is the material fed by the gear at 12?

A. Well, the material drops from the hopper down into that purely by gravity, and then this gear pump forces it out in some way that isn't very clearly shown in the patent, but I assume it is fed out lengthwise.

Q. Could the structure of Colburn, so far as the gear is concerned, that is, the gear 12, be applied to either the [206] Brend or Earnshaw patents?

A. No, because it is just a method of feeding material at a fairly low velocity, and the other patents must impel the material at a very high velocity in order that it shall make contact on the surface and adhere properly.

Q. With relation to the velocity, would your statement be the same as to the patents that we have discussed, Clow, Hamill, Barker, as to low velocity?

A. Oh, yes, they are all low velocity devices.

Q. The same is true for Colburn?



(Testimony of Robert L. Daugherty.)

A. That is true.

Q. Now, take the patent to Rerick.

Mr. Mellin: That one we withdrew.

Mr. Brown: Oh, did you? It is in the book, though.

The Court: I think you had better pull it out of the exhibit. You had better pull it out if you are not relying on it.

Mr. Mellin: I thought I pulled it out, your Honor.

The Court: No, the copy you have lent me still has it.

Mr. Mellin: I will take it out.

The Court: Yes, you take it out.

Q. (By Mr. Brown): The patent to Devlin, No. 2,567,699, what does that patent disclose to you?

A. Well, that shows a variety of a rotary pump, practically a gear pump, although they are not real gear teeth, but it is the same principle. [207]

Q. Would your remarks with regard to this patent be the same as your remarks concerning Hamill and Clow? A. Just the same, yes.

The Court: What is the meaning on line 2? What is the meaning of that first sentence, especially the last part of it, where it says it deals with a pump for liquids of the gear type? Does that mean it has certain consistency, like the viscous——

The Witness: No, I don't think so. It means this is a gear type of pump, that it is a gear type of rotary pump, but the liquid could be any liquid.



(Testimony of Robert L. Daugherty.)

The Court: Oh, that relates to the pump and not to the liquid?

The Witness: Yes. It is not a very well constructed sentence, your Honor.

The Court: No. That is modified, and that relates to the pump?

The Witness: As a matter of fact, the liquid could theoretically be anything, but practically it is better if it is a lubricant, or something of that sort, that does not wear the material.

Q. (By Mr. Brown): And is the material acted upon in the Brend patent, No. '499, Exhibit B, and in Earnshaw, any one of the patents, an abrasive material? A. Oh, yes, it is. [208]

Q. Now, the patent to Wilson, No. 2,603,383, what does this patent disclose?

A. That shows a device for dispensing pellets. I believe those are supposed to be pills as used in the drug industry, and that shows a pair of rubber rollers in close contact with each other, but probably fairly soft rubber, so that the pellets will be fed from the container up above into some place down below.

The Court: Is there a bottle for them?

The Witness: It does not show where it goes, but I suppose it is to put them into a bottle of some kind or another, into pill bottles, and I would say this device is simply a feeder scheme, to feed the pills into some kind of a container, and it is made of rubber so that the pills will not be broken as they go through. But essentially it is a feeder

(Testimony of Robert L. Daugherty.)

device, and the pills drop down by gravity. Again it is a low speed device, so far as that is concerned.

Q. (By Mr. Brown): The purpose, is it not disclosed in the first paragraph of the patent in column 1? There is a description there?

A. Oh, I see. It has a different purpose from what I had assumed. I had interpreted the particular pellets in the patent as pills. You are right, but it is to distribute these pellets, whatever they may be, over some surface fairly uniformly, which is still what I said. [209]

The Court: Maybe they intend to put tar on a roof, and then shoot these in at various spots?

The Witness: I see now that it is still a feeding device, as I mentioned, to feed them over some material.

Q. (By Mr. Brown): Would the rollers as disclosed in this patent, as to 17 and 18, would they rotate at a high velocity for directing the material?

A. No.

Q. What is the function of the rollers, as disclosed in the patent?

A. Simply as a feeding device, to feed the pellets through.

Q. And then they drop by gravity?

A. Then they drop by gravity onto the surface.

Q. From the hopper?

A. Yes. The hopper is up above.

Mr. Brown: I see.

The Court: All of these have one thing in com-

(Testimony of Robert L. Daugherty.)

mon, and that is the rubber surface wheels, or whatever you call them,—

The Witness: Yes.

The Court: —that are used in achieving the purpose.

The Witness: They all have rubber coatings.

The Court: Rubber coatings.

The Witness: Either on the rollers or on the teeth of a gear. [210]

The Court: Or the teeth of a gear.

The Witness: Or on a lobe. In every case it is a rotating device with a rubber coating on it.

The Court: All right.

Q. (By Mr. Brown): Now, the patent to Riedel, No. 250,976, what does this patent disclose to you?

The Court: Which one is that?

Mr. Brown: Riedel, R-i-e-d-e-l, No. 250,976.

The Court: Where is this in the book?

The Witness: In the front of the book.

The Court: How?

The Witness: Near the front of the book. It is close to the front. It is a feed roll for seeding machines.

The Court: Oh, that is Riedel, R-i-e-d-e-l?

The Witness: Yes.

The Court: That would be pronounced Riedel.

The Witness: That is a device for a seeding machine. I would say it is very similar to the pellet machine we just mentioned, because it is to regulate the flow of seeds from some container or hopper up above, and they drop by gravity to the ground,

(Testimony of Robert L. Daugherty.)

so that again there is no question of imparting velocity, because the seeds drop by gravity. It is just a feeding device to separate the seeds.

Q. (By Mr. Brown): And so disclosed in the patent?  
A. It is. [211]

The Court: Referring to a word that is used in Mr. Earnshaw's patent "resilient," wasn't that the word we were talking about yesterday?

Mr. Brown: Yes.

The Court: Now, then, a description of a resilient material would apply to the rubber covered wheels?

The Witness: Yes, your Honor.

The Court: In all cases?

The Witness: Yes, rubber is a resilient substance.

The Court: A resilient substance.

The Witness: Because it is elastic. They mean the same thing, "resilient" and "elastic." They are synonymous.

The Court: I just wanted to relate it to what we are talking about. All right.

Q. (By Mr. Brown): In Riedel, you have two rollers, do you?

A. There are two rollers, yes.

Q. And they are coated with rubber?

A. Yes.

The Court: How do they move? Counterclockwise?

The Witness: They rotate in opposite directions, so that at the point of contact the two surfaces are

(Testimony of Robert L. Daugherty.)

moving in the same direction, because they rotate in opposite directions.

Q. (By Mr. Brown): In Riedel are the seeds directed between the two rollers, or just how are they fed? [212]

A. They go between the two rollers, but there are fairly large grooves shown in these rollers, so that large seeds can be lodged there and not be crushed by the close contact of the rollers.

Q. The rollers are not separated at all?

A. No, they seem to be in contact, except for the grooves that leave rather large space for the seeds to lodge there.

Q. And the seeds stay in the grooves?

A. That is right.

Q. What is the character of the rubber surface on these rollers?

A. It has these grooves cut in it. I believe that the rubber also has little ridges in it as well.

Q. Now, there is a further Brend patent, No. 2,368,742. What does that patent disclose to you?

A. That patent shows a single rotating roller with brushes, and makes a contact with a stationary surface, so as the material is fed into it through this stationary surface, it simply passes it off the surface and throws it on this—in this case a pipe.

Q. Now, taking the brush exhibit with the bristles that is before you, would you consider that that is a resilient surface member?

A. No, I don't think it is a surface you could call resilient. The bristles of the brush can bend,



(Testimony of Robert L. Daugherty.)

but I would not [213] think of that from an engineering standpoint as being a resilient surface.

Q. But you would consider the other exhibit of rubber, as a resilient material?

A. Yes, the rubber is a resilient material.

Q. Now, all of these patents that you have just discussed——

Mr. Brown: I assume I have covered all of them?

Mr. Mellin: That is all.

Q. (By Mr. Brown): ——in your opinion, could they be utilized, the devices shown, in either the Brend device as disclosed in patent 2,380,499 in place of the bristles, or in the Earnshaw patent '943, Exhibit 5?

A. You mean all these rotary pump devices?

Q. Yes.

A. No, they could not be used in either one of these ways.

Q. And the reason?

A. The reason is that they are not adapted to handle abrasive material, fundamentally. The next is they do not discharge the material with a high enough velocity. The purpose is entirely different. It is to deliver material from a low pressure zone to a high pressure zone.

Q. And you would say that the function is different, then? [214]

A. The function is completely different.

Q. And the results obtained different?

A. Yes.

(Testimony of Robert L. Daugherty.)

Mr. Brown: Your witness.

The Court: Assuming that in the Brend patent, instead of the bristles being used, a rubber surface was employed; then there would be just the substitution of only one element?

The Witness: That is true.

The Court: And you would not achieve any different result; isn't that correct?

The Witness: No, you would not achieve a different result from the standpoint of applying the material.

The Court: In other words, if they use that, the patents—let's say of Brend and Earnshaw—would still perform functions which these could not perform?

The Witness: That's right.

The Court: All right.

### Cross Examination

Q. (By Mr. Mellin): Now, Professor Daugherty, in the Colburn patent, that was for the conveyance of an abrasive cement aggregate; isn't that correct?      A. Yes.

Q. And it has a rotating member 12, which is ribbed, [215] and which acts in the movement of this aggregate from one point to another; isn't that correct?      A. That's right.

Q. Now, I call your attention to that patent at column 5, about line 37, where it says this, "The auxiliary rotor 12"—

(Testimony of Robert L. Daugherty.)

The Court: Let me see. Which one are you talking about?

Mr. Mellin: Colburn.

The Court: I thought I could follow it in my mind, but I think I had better find it so long as I have started. You say Colburn?

Mr. Mellin: Yes. It is C-o-l-b-u-r-n.

The Court: I know. It is toward the last part of the book.

The Witness: Which line did you say?

Mr. Mellin: It is about the fourth from the back of the book, your Honor. [216]

\* \* \* \* \*

Q. (By Mr. Mellin): Now, will you look at Figure 3 of the drawing, which is on the second sheet, and compare that with Figure 2 of the first sheet, where there is a ribbed rubber roller, and it says this:—

The Court: What number is that?

Mr. Mellin: It is No. 12, your Honor.

The Court: It is what?

Mr. Mellin: The ribbed rubber roller is No. 12. In Figure 2 it is in the lower left-hand corner, and in Figure 3 it is in the longitudinal section near the bottom.

The Court: All right.

Q. (By Mr. Mellin): Now, in column 5, line 37, it says: "The auxiliary rotor 12 is formed as a rubber bushing which is stretched over the core 71, thus providing the feeding recesses 36 with wear resistant surfaces, and the casing duct 29 is pro-

(Testimony of Robert L. Daugherty.)

vided with a rubber liner 82, while the fitting 80 is also provided with a rubber liner 83."

Wouldn't you say from that, Professor Daugherty, that if you did not know it before, that rubber was a well known material for use in feeding aggregate if you wished to resist abrasion?

A. Yes, rubber will wear better in these cases than, say, metal will.

Q. Yes. In other words, for example, practically all [217] of your life you have known that rubber will resist abrasion in materials of this kind better than metal? A. Yes.

Q. Now, I have a definition by a court of the word "resilient," Professor Daugherty, and it says:

"'Resilient' means the capacity to rebound, and is derived from two Latin words 're-' and 'silire,' to leap."

Now, would you say as to the wire brush that is up in front of you, that those bristles, while they will bend to some degree, wouldn't you say that they would yield under the pressure while they are rotating with a piece of aggregate in it, and then rebound to their normal position?

A. Yes, that is true, but as an engineer I look upon "resilient" in a somewhat different light, but I realize that is not the same as a solid metal surface. There is some yield to it.

The Court: Resiliency, doesn't that apply to going up and down rather than going side ways, the way a brush would?

The Witness: That is the way I would take it.

(Testimony of Robert L. Daugherty.)

Q. (By Mr. Mellin): Well, don't these go radially inward and then rebound outwardly?

A. No, I don't think they go inwardly.

Q. Bend? I mean, they bend?

A. They bend side ways. [218]

Q. Well, they will bend circumferentially, won't they?

A. That is what I mean by side ways.

Q. I see. I was thinking of the opposite of that, of the perpendicular.

A. It can't just go radially inward. It has to deflect or bend.

Q. What has been your actual practical experience in spraying concrete on pipe in the fashion we have been discussing, Professor?

A. None whatever.

Mr. Mellin: That is all.

Mr. Brown: That is all.

\* \* \* \* \*

The Court: Anything further, gentlemen?

Mr. Brown: No, your Honor.

Mr. Mellin: Nothing further, your Honor.

The Court: Then come back at 2:00 o'clock, and I will hear any argument you want to present. It is seven minutes to 12:00 now, and I have a lot of things to do.

(Whereupon at 11:53 o'clock a.m., an adjournment was taken until 2:00 o'clock p.m. of the same date.) [219]



Wednesday, March 27, 1957. 2:00 P.M.

The Clerk: Case No. 20040-Y, Spencer A. Earnshaw v. American Pipe and Construction Co., further court trial. All parties present, your Honor.

The Court: Now, sometimes, gentlemen, it happens when we have a recess counsel think of some additional facts they want to present.

Have all of the exhibits that have been identified been received, Mr. Cunliffe?

The Clerk: Yes, your Honor, everything is in evidence.

The Court: Then I will hear you, gentlemen, and as you are for the plaintiff, you have the opening and the closing.

(Opening argument on behalf of the plaintiff by Mr. Wright.)

(Argument on behalf of the defendant by Mr. Mellin.)

(Closing argument on behalf of the plaintiff by Mr. Brown.)

The Court: Then, gentlemen, the matter will be submitted. [220]

\* \* \* \* \*

Los Angeles, California

Tuesday, May 21, 1957

9:30 A.M.

Appearances: For the Plaintiff: J. Marion Wright, Esq., 453 South Spring Street, Los Angeles 13, California. For the Defendant: Mellin, Hanscom & Hursh, By: Oscar A. Mellin, Esq., 391 Sutter Street, San Francisco 8, California.

The Clerk: Case No. 20040-Y, Spencer A. Earn-

shaw v. American Pipe and Construction Co., hearing on plaintiff's motion to modify findings. Mr. J. Marion Wright for the plaintiff, and Mr. Oscar Mellin for the defendant.

Mr. Wright: Ready for the plaintiff.

Mr. Mellin: Ready for the defendant. [224]

\* \* \* \* \*

Mr. Wright. If the court please, this is a motion made by the plaintiff and counter-defendant, Spencer A. Earnshaw, to modify the findings of fact by striking out paragraph 14. [225]

\* \* \* \* \*

Now, I submit this finding 14 is surplusage, it is not necessary to the case, it is not within the issues, and there is no evidence to sustain it, because no evidence was taken on that issue, it not being an infringement action, and no infringement was involved. [226]

\* \* \* \* \*

The Court: However, I have no recollection of paying any particular attention to paragraph 14, and let me ask you this question: Aren't you rather apprehensive about this paragraph? Doesn't it merely mean that they have not used any of the teachings of the patent, and doesn't that refer to the evidence in the record, which is also reflected in the memorandum, that they in reality used an older patent, another patent to which they added these brushes, and that for that reason they paid him the minimum royalty, and no more.

Also, isn't there a paragraph, or, let me go to the memorandum on page 4, where I say:

"So the upshot of the matter is this: By his own contract the plaintiff has limited his right to 'improvements' on his own machine. His machine was never used by the defendants, they merely paying him the minimum royalty. The change in brushes was made not on his, but on the Brend machine, an 'improvement,' if it be [227] such, which was specifically excluded from the license agreement. The idea for the substitution of rubber came to the defendant from another source long before the disclosures made in the Earnshaw applications for patent. So the plaintiff is not entitled to royalties for the substitution of something which not only did not originate with him, but which was never applied to his device."

Now, this paragraph 14 says:

"That Defendant, American Pipe and Construction Co., has not used in its operations any novel features brought to the art in any of Plaintiff's three subsequent patent Nos. 2,639,942," and so forth.

Mr. Wright: Yes, your Honor, but that is in effect in a way, as I still construe it, a statement that there had been no infringement of any of these three patents.

The Court: Oh, no.

Mr. Wright: That is the way it appears to me.

The Court: This is not as to infringement, "so as to entitle him to royalty under the same." I think that really should go in there.

Mr. Wright: That is all right. [228]

\* \* \* \* \*

The Court: Now, in this particular case only a claim of invalidity was used, but I do not think that this statement means anything except this: That they did not use any of the teachings of your improved patents, and for that reasons you were not entitled [229] to royalty upon any of the devices that they used.

Mr. Wright: Now, your Honor, when I approved the findings as to form on reading them, I did not see the import of this paragraph, that it was a statement that would perhaps be decisive on the question of infringement. But after having it called to my attention, also by someone else that Mr. Earnshaw went to, that it might bar an infringement action if anyone wanted to bring an infringement action, I felt it my duty to straighten this out, and I feel it is——

The Court: Let's hear from Mr. Mellin. I am quite certain that he does not want a judgment beyond what I gave him, and that he does not want to catch me or you in an embarrassing position of deciding something I did not intend to decide, and thereby bind your client. But let us see what he says.

Mr. Wright: May I say this, first. I filed an affidavit by the President of the American Pipe and Construction Co. stating that it was his information or his position that this settled the infringement. You will find it on page——

Mr. Mellin: If the court please,——

The Court: Just a minute.

Mr. Mellin: Pardon me.

Mr. Wright: —page 2, line 26 of that affidavit, so it is the position of the president, anyway, that that is settled by that finding, I suppose.

The Court: Just a minute. Let me look at it. [230]

Mr. Wright: This is from line 26 on, Lines 26, 27, 28 and 29 of page 2.

The Court: His statement that the infringement was raised does not dispose of the matter. Let's hear what Mr. Mellin has to say. [231]

\* \* \* \* \*

The Court: Well, I merely decided you did not use in your operations any of the teachings of the patent, and for that reason they were not entitled to royalties.

Mr. Mellin: That is all that finding is, your Honor.

The Court: But I do not want to make this res judicata in any other lawsuit relating to any other matter.

In order to make it certain, I am going to put a comma after that, and put in the words, "that the defendant has not used any, and that for that reason it is not subject to [232] royalties under said patents."

I think I will put that in. Of course, that ties it to the other, but because it has opened an argument, I do not desire to go beyond that. I think the conclusions of law should be read together.

Let us agree upon the language. I think you are entitled to a finding that you did not use it. I think,



however, to avoid any question, although I think that paragraph 3 of the conclusions of law takes care of it, I think we ought to put a semicolon after "2,681.725," and add this:

"and is, therefore, not liable to plaintiff for royalties for such use."

Mr. Mellin: That is all right with me, your Honor.

Mr. Wright: What is the wording there, your Honor?

The Court: "and is, therefore, not liable to plaintiff for royalties for such use."

Is that satisfactory?

Mr. Wright: Well, yes, if we amend it that way, but the findings are complete without 14 being in there at all.

The Court: No, they are entitled to this, because they are entitled also to a finding that they did not use it. You see, I want to work both ways. I want to protect them as far as their judgment is concerned, and protect you, too, and I have said specifically in the memorandum that the improvements they used are not yours. [233]

You might go into another district and bring another suit. You know the system of going to another state even, or going to the Northern District, where Mr. Mellin resides, and this would not be *res judicata* on infringement, but it would be *res judicata* on use.

Mr. Wright: Then the wording is——

The Court: Just a moment. I will give it to you. I am going to give it to you, because I have said it specifically. I will change that period to a semicolon, and to avoid any question I will say that I am doing this on my own motion, under the rules, which entitle me on my own motion to modify findings where it is called to my attention that an error has been committed. Then it will read:

“and is, therefore, not liable to plaintiff for royalties for such use.” [234]

\* \* \* \* \*

The Court: Then the motion to strike will be denied. The court, however, will on it own motion, and because it is convinced that paragraph 14 of the findings may be misinterpreted, modify it as indicated, and the reason I put it on my motion is because there may be a question as to whether this motion, except if originating from me, was made within time, and I do not want any technicalities to stand in the way.

Mr. Mellin: Thank you, your Honor.

The Court: All right. [235]

### Certificate

I hereby certify that I am a duly appointed, qualified and acting official court reporter of the United States District Court for the Southern District of California.

I further certify that the foregoing is a true and correct transcript of the proceedings had in the above entitled cause on the date or dates specified

therein, and that said transcript is a true and correct transcription of my stenographic notes.

Dated at Los Angeles, California, this 10th day of June, A.M. 1957.

/s/ MARIE G. ZELLNER,  
Official Reporter.

[Endorsed]: Filed June 14, 1957.

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[Endorsed]: No. 15630. United States Court of Appeals for the Ninth Circuit. American Pipe And Construction Co., Appellant, vs. Spencer A. Earnshaw, Appellee. Transcript of Record. Appeal from the United States District Court for the Southern District of California, Central Division.

Filed: July 18, 1957.

Docketed: July 18, 1957.

/s/ PAUL P. O'BRIEN,  
Clerk of the United States Court of Appeals for the  
Ninth Circuit.

In the United States Court of Appeals  
For the Ninth Circuit

No. 15630

AMERICAN PIPE AND CONSTRUCTION CO.,  
a corporation, Appellant,  
vs.

SPENCER A. EARNSHAW, Appellee.

CONCISE STATEMENT OF POINTS UPON  
WHICH APPELLANT INTENDS TO RELY  
ON APPEAL

Comes Now, Appellant herein, American Pipe And Construction Co., a corporation, and makes the following concise statement of the points on which it intends to rely:

1. The District Court erred in failing to adjudge and decree that appellant, American Pipe And Construction Co., above named, committed no acts of infringement of any of the claims of appellee's patents Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725.

2. The District Court erred in failing to adjudge and decree that the "Brend" machine manufactured and used by appellant, American Pipe And Construction Co., did not come within the scope of any of the claims of appellee's Letters Patent Nos. 2,168,329, 2,639,942, 2,639,943 and 2,681,725.

3. The District Court erred in finding and con-

cluding that appellant, American Pipe And Construction Co., failed to sustain the burden of proving Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725 to be invalid.

4. The District Court erred in failing to adjudge and decree that appellee's Patent Nos. 2,639,942, 2,639,943 and 2,681,725 were invalid in law.

5. The District Court erred in dismissing the counter-claim and denying appellant, American Pipe And Construction Co., the relief prayed for therein.

Respectfully submitted,

AMERICAN PIPE AND CON-  
STRUCTION CO., Appellant.

HILL, FARRER & BURRILL,  
MELLIN, HANSCOM & HURSH,

/s/ By OSCAR A. MELLIN,

Its Attorneys.

Certificate of Service Attached.

[Endorsed]: Filed Aug. 8, 1957. Paul P. O'Brien,  
Clerk.



No. 15630

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United States  
Court of Appeals  
for the Ninth Circuit

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AMERICAN PIPE AND CONSTRUCTION CO.  
Appellant,

vs.

SPENCER A. EARNSHAW, Appellee.

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Transcript of Record

In Two Volumes

VOLUME II.

Book of Exhibits

(Pages 245 to 411, inclusive)

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Appeal from the United States District Court for the  
Southern District of California,  
Central Division



No. 15630

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United States  
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## PLAINTIFF'S EXHIBIT No. 2

S. A. Earnshaw Patent No. 2,168,329

Filed Jan. 2, 1937

Patented Aug. 8, 1939





## PLAINTIFF'S EXHIBIT No. 5

S. A. Earnshaw Patent No. 2,639,943

Filed April 30, 1948

Patented May 26, 1953



## PLAINTIFF'S EXHIBIT No. 6

S. A. Earnshaw Patent No. 2,639,942

Filed Nov. 5, 1948

Patented May 26, 1953



## PLAINTIFF'S EXHIBIT No. 7

S. A. Earnshaw Patent No. 2,681,725

Filed June 20, 1949

Patented June 22, 1954





## DEFENDANT'S EXHIBIT "B"

W. R. Brend Patent No. 2,380,499

Filed Jan. 14, 1942

Patented July 31, 1945



## DEFENDANT'S EXHIBIT "F"

November 28, 1950

Mr. Spencer A. Earnshaw,  
132 East 77th Street,  
Los Angeles 3, California.

Dear Sir:

We hereby authorize you to enter into a non-exclusive license agreement with the Lock Joint Pipe Company of East Orange, New Jersey, for the use by them of an apparatus covered in your United States Patent No. 2,168,329, issued August 8, 1939, for a plaster machine and methods.

It is understood and agreed between you and ourselves that such non-exclusive license which you are granting to the Lock Joint Pipe Company will in no way affect the rights which we have under our agreement with you, dated February 8, 1944, for the use of said Patent.

You are to furnish us with an exact copy of the non-exclusive agreement which you execute with the Lock Joint Pipe Company.

Yours very truly,

AMERICAN PIPE AND CON-  
STRUCTION CO.

/s/ H. H. JENKINS,

H. H. Jenkins,

Executive Vice President.

Accepted:

/s/ Spencer A. Earnshaw

Date: November 28, 1950.

HHJ:ha

cc: A. M. Hirsh, Jr. President Lock Joint Pipe  
Company East Orange, New Jersey

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DEFENDANT'S EXHIBIT "G"

LICENSE AGREEMENT

This Agreement made and entered into, in duplicate, by and between Spencer A. Earnshaw of 132 East 77th Street, Los Angeles, California, hereinafter referred to as "Earnshaw" and Lock Joint Pipe Company, a corporation duly organized and existing under the laws of the State of New Jersey, having its head office at East Orange, New Jersey, hereinafter referred to as "Lock Joint".

"Witnesseth":

Whereas, Earnshaw represents and warrants that he is the sole owner of U. S. Letters Patent No. 2,168,329, issued August 8th, 1939, and has full legal capacity to grant the non-exclusive license hereinafter granted;

Now, Therefore, in consideration of the mutual covenants hereinafter expressed, the parties hereto agree as follows:

1. Earnshaw hereby grants to Lock Joint a non-exclusive license under said Letters Patent No. 2,168,329, issued August 8th, 1939, to use the methods



covered by said Letters Patent, and sell the products thereof throughout the United States and its territories for the remainder of the term for which said Letters Patent is granted and for any extensions thereof and improvement patents thereof that may be granted for use only in the manufacture and/or lining and/or coating of pipe made of any material.

2. Earnshaw retains all other rights to the use of the patented devices and methods for any other purposes than the ones specifically conveyed to Lock Joint in Paragraph #1.

3. Lock Joint agrees to pay to Earnshaw a royalty of four-tenths of one cent (\$.004) per square foot of lining or coating on all pipe coatings made or caused to be made by Lock Joint where pipe coatings are accomplished by the performance of equipment covered by aforesaid Patent No. 2,168,329, or any improvement patents thereof that may be granted, excluding cast or molded pipe or pipe lined inside by centrifugal spinning process and excluding all inside lining of pipe of every kind unless such inside lining is accomplished by the performance of equipment covered by the aforesaid Patent No. 2,168,329, or any improvement patents thereof that may be granted. The said royalty shall become due and payable quarterly, the first royalty payment will be due on or before February 15, 1951, and covering all coatings placed by Lock Joint to pipe up to and including February 1, 1951.

4. At the time of paying royalty, Lock Joint

agrees to supply a written statement reflecting the total number of square feet of coating that Lock Joint has performed or caused to be performed with the apparatus or improvements, modifications or alterations thereof. If either Earnshaw or Lock Joint make any improvements to said Letters Patent No. 2,168,329, said improvements shall inure to the benefit of both parties, as in Paragraphs #1, #2 and #3.

5. Lock Joint agrees to keep true and accurate books of account of the coatings performed or caused to be performed by Lock Joint with the process subject of this agreement, and to hold the same open to the inspection of Earnshaw or his duly authorized representatives during all business hours, provided, however, that Earnshaw shall not require inspection of said books of account more frequently than semi-annually. Lock Joint agrees, during the life of this agreement, to pay a minimum of royalty of One Hundred (\$100.00) Dollars per month, payable quarterly, but the said payment shall be a full credit to Lock Joint on earned royalty in the same quarter as said earned royalty becomes due and payable. The One Hundred (\$100.00) Dollars a month minimum royalty shall start November 1, 1950, and shall be considered a complete fulfillment of the obligation of Lock Joint in respect to minimum royalties in any month upon payment by Lock Joint of said minimum royalty of One Hundred (\$100.00) Dollars.

6. This agreement shall inure to the benefit and

be binding upon the respective heirs, executors, administrators, successors, personal representatives and assigns of the parties hereto.

In Witness Whereof the parties to this agreement have executed the same this 28th day of November 1950.

/s/ S. A. E.

Spencer A. Earnshaw.

Witness:

/s/ (Illegible.)

Witness:

/s/ J. E. LONGLEY, Secretary

LOCK JOINT PIPE COMPANY,

/s/ A. M. HIRSH, JR.,

President.

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DEFENDANT'S EXHIBIT "H"

[Letterhead of J. E. Simpson.]

[Pencil written note: In Tel. conversation with FFJ, 8/8/55 Earnshaw said Simpson no longer his attorney, and that he was engaging another.]

July 20, 1955

American Pipe & Construction Company,  
P. O. Box 3428 Terminal Annex,  
Los Angeles 54, California.

Attention: Robert V. Edwards, President

Gentlemen:

On June 2, 1955, I wrote you concerning the

License Agreement between Spencer A. Earnshaw and American Pipe & Construction Company, dated February 8, 1944, calling attention to our meeting of February 2, 1955. In that meeting, and in my letter, I called attention to the fact that American had not asserted that the Earnshaw patent No. 2639943, the so-called roller patent, was an improvement upon the earlier Earnshaw patent No. 2168329 which was the subject of the License Agreement, and that American had failed to pay the costs of patenting the invention covered by patent No. 2639943.

In your letter of June 13, 1955, you simply stated that you felt that little would be gained by repeating what had been said several times.

On behalf of Mr. Earnshaw I am hereby advising you that we now understand that it is American's position that Earnshaw's patent No. 2639943 is not included within the License Agreement between American and Earnshaw dated February 8, 1944; that American does not claim, assert or understand that the said patent No. 2639943 is an improvement upon the Earnshaw patent No. 2169329, the subject of the said License Agreement, and further that Mr. Earnshaw is now and at all times the refusal of American to pay the costs of patenting the latter patent has been, free to license others to manufacture, use and sell apparatus coming within the metes and bounds of Earnshaw's patent No. 2639943.

Yours very truly,

/s/ J. E. SIMPSON,

J. E. Simpson.

JES-d

## DEFENDANT'S EXHIBIT "M"

[Title of District Court and Cause.]

DEPOSITION OF SPENCER A.  
EARNSHAW

taken on behalf of Defendant and Counterclaimant, at 411 West 5th Street, Los Angeles, California, commencing at 10:00 o'clock A.M., Tuesday, February 5, 1957, before Ben A. Bell, CSR, Notary Public, pursuant to stipulation.

Appearances of Counsel: For plaintiff and counterclaim defendant: J. Marion Wright, J. Calvin Brown, and Owen E. Kupfer, Esqs., By J. Marion Wright and J. Calvin Brown, Esqs. For defendant and counterclaimant: Hill, Farrer & Burrill, Esqs., By: Frank D. MacDowell; and Mellin, Hanscom and Hursh, Esqs., By Oscar A. Mellin, Esq. [1]\*

SPENCER A. EARNSHAW

having been first duly sworn, deposed and testified as follows:

Mr. Mellin: May we have the usual stipulation that all objections are reserved save as to the form of the questions?

Mr. Wright: Yes.

Mr. Mellin: And may it be stipulated that if the witness is instructed not to answer, and he refuses to answer that it may be deemed that the notary has read him the question and instructed him to answer, and that the witness was directed by the notary to

---

\* Page numbers appearing at top of page of Original Deposition.



Defendant's Exhibit M—(Continued)  
 (Deposition of Spencer A. Earnshaw.)  
 appear before the United States District Court at  
 a time convenient to the court on a motion of the  
 defendant-counterclaimant to compel him to an-  
 swer.

Mr. Wright: So stipulated.

### Direct Examination

Q. (By Mr. Mellin): Will you state your full  
 name, Mr. Earnshaw?

A. Spencer Arnold Earnshaw.

Q. Where do you reside, Mr. Earnshaw?

A. 132 East 77th Street, Los Angeles, Zone 3.

Q. How long have you lived there, Mr. Earn-  
 shaw?

A. A little over 10 years at that one address.

Q. Did you live in Los Angeles prior to that  
 time? [2]

A. Across the street, 143 East 77th.

Q. How long did you live there, approximately?

A. Oh, approximately 20 years.

Q. What is your occupation?

A. I was a plasterer at one time.

Q. You were a plasterer. Did you change your  
 occupation? A. I quit plastering in '47.

Q. 1947? A. Yes, sir.

Q. What has been your occupation since that  
 time?

A. I haven't had any occupation since.

\* \* \* \* \*

Q. What occupations had you had before be-

Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

coming a plasterer, or had you been a plasterer for many years?

A. I think I was initiated in the Union about '23.

Q. 1923?           A. That's right.

\* \* \* \* \*

Q. Did you have anything to do with the manufacturing of concrete pipe during that period?

A. No, I didn't. [3]

\* \* \* \* \*

Q. Now, you are the Spencer A. Earnshaw who is the patentee of Patent 2168329, which I show you?           A. Yes.

Q. It is dated 1939. I will offer a copy of that for identification as American Pipe Exhibit 1 to the Earnshaw deposition.

(The instrument in question was marked by the Notary Public as American Pipe Exhibit 1 for identification (Earnshaw), and thereupon returned to counsel.) [4]

\* \* \* \* \*

Q. But its primary purpose was to plaster walls, wasn't it?

A. That was one of the purposes, yes.

Q. I read from the patent and ask you if it isn't a correct statement: "A further object of the invention is to provide an apparatus adapted for handling plastics or fluids and applying such material to wall, ceiling, or other portion of build-

Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)  
ing or structure.” That’s what you had in mind originally for it, wasn’t it?

A. Well, I will quote what the conversation was between the patent lawyer and myself. He said——

Q. Let’s answer the question, Mr. Earnshaw; it will save a lot of time.

A. He said, “What do you want to do with this, Mr. Earnshaw?” And I said, “If you make a list of some of the things we can do with it, it will be about three [5] miles long.”

Q. But originally you had in mind a machine that had at least one function which was to plaster walls; isn’t that correct?

A. That’s the idea, yes.

Q. And you had the machine adapted so that you could feed the material at different heights to go along a vertical wall?

A. I imagine it has that movement in there, yes.

Q. You imagine? Don’t you know?

A. Well, I know it does.

Q. Now, did you ever build a machine such as is shown in that patent?

A. I built a model that was taken over to the American Pipe at one time. I had a fellow build it for me. I am a very poor mechanic myself. It was a homemade construction affair. It consisted of a belt, about eight feet from pulley to pulley, 16 inches wide. It had a roller on it. It was on wheels that swiveled, and you could tilt it by—the

## Defendant's Exhibit M—(Continued)

(Deposition of Spencer A. Earnshaw.)

motor was almost a perfect balance for it so that it would tilt up and down.

Q. That is, the feed end or the discharge end of the belt, you could feed it up and down?

A. Yes, you could raise and lower the belt—well, there was a wheel on there. We had a gear in it. By taking ahold of this wheel, with the almost perfect balance of the [6] belt you could guide the belt up and down for different heights.

Q. Now, the material was fed to the point of application by means of a belt on that machine, wasn't it?

A. The material was given the velocity of the belt, and it was thrown from the belt to where it was to be put.

Q. By the velocity of the belt?

A. That's right.

Q. In other words, the material was discharged onto the belt and the belt conveyed it along and threw it onto the wall or whatever else you were plastering?

A. Yes.

Q. How did you control the thickness of application? [7]

\* \* \* \* \*

Q. And the material was deposited on the belt and then traveled along the belt and obtained its velocity and then was placed on the wall from the belt—thrown on the wall from the belt?

A. That is correct.

Q. At the end of the belt. How did you con-

## Defendant's Exhibit M—(Continued)

(Deposition of Spencer A. Earnshaw.)

trol the thickness of the application of that material on the wall?

A. By the movement of the belt.

Q. Was that moved manually?

A. Yes, at that time. [8]

\* \* \* \* \*

Q. Actually in the machine the material is fed between the two belts and travels along with the belts, doesn't it, regardless of what else it does; it is fed between the two belts, 73 and 46?

A. Yes, the material is fed between the two surfaces.

Q. Then it travels along belt 46 till it gets to the end or the semicircular end of the belt? [9]

A. Where it is thrown by the centrifugal action of the belt coming around the circle.

Q. In other words, it would be thrown off approximately where the numeral 47 is indicated?

A. According to the speed of the belt. Belts will have a certain action, and when you put material on something, it isn't going to come off, especially if it has an adhesion, unless you create some way of getting it off either by gravity or by motion, or something. So the centrifugal action of the roller underneath the belt pulls the belt from the material.

Q. And lets the material project forwardly in the line of the belt? A. That's right.

Q. While the belt goes down underneath the material? A. That's right.



Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

Q. Now we get back to the question I asked you. At the discharge end of the machine you didn't provide two circular rollers or drums between which the material was discharged directly to the object to be plastered?

A. Not in this patent, I don't believe.

Q. What were those belts made of, Mr. Earnshaw, in that patent?

A. I have used various kinds of belts. I first manufactured my own with clothesline rope and string. Then [10] I took a piece of canvas and sewed that together. Then I took a piece of old, red innertube out of an automobile, and I sewed that together.

Q. In other words, you made rubber belts for those machines?

A. I wouldn't say that the string and the clothesline was rubber.

Q. How about the red innertube?

A. The red innertube was rubber, yes.

\* \* \* \* \*

Q. Then it was within your range of knowledge at the time that you conceived the machine shown in that early patent of 1939 that you could use rubber belts, if you wished, in it?

A. I was trying to find the very best kind of a belt there was. There was all kinds of belts. I understand there has been all kinds of belts on the market. This patent has been in effect for some years, and just what belts have been available

## Defendant's Exhibit M—(Continued)

(Deposition of Spencer A. Earnshaw.)

at that time and what belts are [11] available now, I guess there is quite a difference.

\* \* \* \* \*

Q. You haven't answered my question yet. What I asked you is this: You had in mind all during that time that you could use belts of any material that were satisfactory for the purpose.

A. If I could find a belt that would be satisfactory, that's what I was intending to use, yes.

Q. And you knew at that time that rubberized or rubber-coated belts were common; isn't that a fact?

A. Yes, there was rubber belts on the market.

Q. Now, you talked about this model that you have. Where is that model now? [12]

A. I have it. It's at my place.

Q. Is it in condition to demonstrate what you show in your early patent?

A. Like I say, it's just a belt. I don't know whether the belt has deteriorated with age. I had a one-horsepower motor I was working with there on it. I don't know whether the deterioration of the belt would be so that we could drive it or not. We could see it, though, if you want to look at it.

Q. What material is the belt on that machine made of?

A. I believe it's a four-ply rubber impregnated canvas with about a sixteenth of an inch of rubber possibly on the surface of it.

## Defendant's Exhibit M—(Continued)

(Deposition of Spencer A. Earnshaw.)

Q. When did you make that model, approximately?

A. I think it was in about '42.

Q. Somewhere in that area, the area of the year 1942?

A. Yes. [13]

\* \* \* \* \*

Q. During the time that you were talking about the agreement with Howard Jenkins and Bill Whitling, did they take you out into the yard of American Pipe?

A. Yes, I have been in the American Pipe yard twice. I was in there last week, Wednesday, and then Mr. Jenkins, H. H. Jenkins, and I went out into the yard and we seemed to go along a building right in from the gate there a ways, and there was a machine sitting there; it was called a Gillespie machine; I'm quite sure it was a Gillespie inside lining machine; and Mr. Jenkins showed me that. Then we walked back and around. They were sand blasting—I believe it was shot blasting some steel pipe. There was a colored boy sitting there with a nozzle, and he was shot blasting some pipe there, and it was pretty good-size pipe, maybe four-foot diameter, I believe. And then we got over to this machine and there was some wire brushes there, two wire brushes, and I noticed they were very much grooved out, and they seemed to be kind of a very coarse wire to me. The wire was—let's see—about the size of a lead pencil, I imagine, or close to that size, as I recall it, and they [19]

## Defendant's Exhibit M—(Continued)

(Deposition of Spencer A. Earnshaw.)

seemed to be very much grooved out, and it looked to me like as if——

\* \* \* \* \*

Q. (By Mr. Mellin): You were talking about the wire brushes.

A. They were coating a pipe there, and the coating was put—there was a hopper that was on a structure pretty close to the ground. It was full of material, so I don't know just what the means was of getting the material out of there; but I noticed it kind of slid down. Then these two brushes was riding on this frame on wheels and there was a cable that pulled it, and the material was thrown——

Q. The cable pulled the machine along the pipe?

A. Yes.

Q. The pipe was rotating? [20]

\* \* \* \* \*

Q. In that early machine that you saw the first time you were out there, it had two counterrotating brushes and the material was fed from behind between those brushes? A. That's right.

Q. As far as the feeding is concerned, it was very much like the machine you saw the other day?

A. Very much, I guess, in the same——

Q. The difference between the machines was, the machine you saw the other day had rubber-covered brushes or rollers, and the machine you saw earlier had these wire brushes that you speak of?

Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

A. Yes, the machine we saw the other day, there was a difference in the way of it. You take a series of points of wire sticking out; you don't push a piece of wire straight back in; it doesn't yield straight back towards the center; it stays there. You can push it over to a side like you can push your finger; but you can't push it down. If you have a particle of material that goes to get on that surface there, there is no surface for it to get onto. You see what I mean?

\* \* \* \* \*

Q. You saw a machine out there the other day that was using wire brushes, didn't you?

A. Yes.

Q. Was that substantially like the machine that you saw the first time you were out there?

A. This one the other day, the wires, I believe, were a little bit finer. [22]

Q. But other than that, the machine was substantially the same as that which you—

A. I had the impression in 1944, I think it was, when I was in the yard, that the brush was all made in one unit.

Q. You didn't know if that was a fact or not?

A. I didn't know.

Q. That is, the wire brush?

A. That's right.

Q. Did you say, Mr. Earnshaw, that the wire brush doesn't operate satisfactorily, or you noticed that at the time?



Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

A. From my experience the wire brush may operate satisfactorily for some purposes. But the wear and tear and the way it acts, the way I imagine it acts, I wouldn't say it would suit me on all occasions. It has its purposes.

Q. You said, from your experience. What experience have you had with wire brushes?

A. I haven't had but very little experience with wire brushes.

Q. So what you are speaking of now is your opinion or your theory of the matter?

A. That's right. [23]

\* \* \* \* \*

Q. Now, you are able to read drawings to some degree, aren't you, if they are in connection with machines of this character, Mr. Earnshaw?

A. Yes, I understand a little about drawings.

Q. All right, I will show you a copy of Patent No. 2380499, dated July 31, 1945, issued to W. R. Brend, and I will ask you if that generally does not illustrate the machine that you saw at the plant in 1943 or 1944 before you entered the contract with American Pipe?

A. When I saw the machine, I could see quite a bit of the brush. I don't remember all this housing around the front part of it here (indicating).

Q. In other words, that shield may have been shorter than shown in Figure 2?

A. It may have been shorter.

Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

Q. The shield that you are referring to I will identify as "shield" on this. That is correct. Those were shorter to some degree.

A. I don't recall the shield at all, like I don't recall the shield on this machine the other day; I saw quite a bit of the brush the other day, and I don't recall a shield on there.

Q. Let's go to Figure 2 to the right. The material is fed tangently into between the rollers; that is the [24] way it was fed into the machine that you saw in 1943 or 1944?

A. I didn't see the back part of this machine.

Q. You knew the material came in between the brushes?

A. I knew the material was produced into the brushes, yes.

Q. Leaving out the minute details of construction, in general that Brend patent shows the general elements of the machine that you saw in 1943 or 1944, isn't that correct, at American Pipe?

A. I guess that would be correct. [25]

\* \* \* \* \*

Q. Now, at the time that you saw this early machine with Mr. Jenkins out in the yard that used the wire brushes, as you testified to, did you at that time tell Mr. Jenkins you expected royalties on that machine when it used wire brushes?

A. Ask me that question again.

Mr. Mellin: Read it to him, will you?

(The question was read by the reporter.)

Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

The Witness: No, I didn't discuss royalties about the [37] Lock Joint machine.

Q. In other words, you don't contend here that you are entitled to royalties on the machine that you saw the other day where it uses wire brushes instead of rubber brushes?

A. No, I am not entitled to use the wire brushes. The wire brush is a patent by somebody else. [38]  
\* \* \* \* \*

Q. I hand you copies of Patents 2639943, 263-9942, and 2681725. Are those the patents that you are referring to?

A. This (indicating) is the one I was referring to.

Mr. Mellin: The one the witness identifies is Patent No. 2639943. [43]

Q. That's the one you referred to as, I think, to use something of your words, "covers the rubber-covered rollers or brushes"?

A. What were the words you just used?

Mr. Mellin: Read it to him. Don't let me put words in your mouth. You just use your own words.

(The question was read by the reporter.)

The Witness: I have been referring to my patent as rubber rollers. [44]  
\* \* \* \* \*

Q. Are there any other advantages in using rubber in lieu of wire brushes?

A. The wear on them. I believe that the wear

## Defendant's Exhibit M—(Continued)

(Deposition of Spencer A. Earnshaw.)

on the rubber is less than what it would be on the wire.

Q. Any other advantages?

A. The cost. I don't know about the cost of the wire brush, but I believe the cost of the rubber would be less than what the wire cost. [52]

\* \* \* \* \*

A. The rubber still has the resilient advantage that I claim for it; but if you are going to allow the rubber to be put together in such a fashion that it will hang onto particles, that's something I don't know about.

Q. Then you wouldn't have any complaint as to the way American is using their rollers, would you?

A. If the rubber bends and yields and grips the material between two surfaces, then I think that there is an infringement. [54]

\* \* \* \* \*

Q. Let's get back to the question. I will get an answer to the question if I have to stay here all afternoon. Read him the question.

(The question was read by the reporter.)

Q. (By Mr. Mellin): In other words, all of those features that you previously mentioned of having the machine to change its angles and to coat vertically, and all of those things, they don't use those features?

A. The features they use now is the yielding of the rubber against the material and gripping the material and throwing it, the feature that they use,

Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

and the driving of the rollers. Now, you can drive rollers faster than you can belts because they won't explode. Belts will explode, but rollers will not explode.

Q. Now, in your Patent 2639943 you had in mind at that time that you could use either wire brushes for the drums 12 and 13 or rubber-coated brushes; isn't that correct?

A. In this one place here I say wire brushes could be used in this device because it gives an advantage of more than one stream. [56]

\* \* \* \* \*

Q. Now, as I just gathered from your testimony, the only complaint that you have of the present American machine [58] that you witnessed the other day is that they use rubber rollers for discharging materials instead of wire brushes; is that correct?

A. Read that to me, will you.

(The question was read by the reporter.)

The Witness: That's right. They adapted—they took out the wire brushes and they have adapted the rubber roller to fit in the place of the wire brush.

Q. (By Mr. Mellin): Now, would it make any difference to you whether those rollers had smooth exteriors or were treaded, as you call it?

A. I have claimed for both ways.

Q. So it wouldn't make any difference?

A. As far as the patent is concerned, if they use



## Defendant's Exhibit M—(Continued)

(Deposition of Spencer A. Earnshaw.)

rubber of any kind they are infringing on this patent because they are projecting material from between——

Q. Two rubber surfaces?

A. The rubber surface.

Q. And it wouldn't make any difference whether they were smooth rollers, that is, smooth on their periphery, or whether they were treaded?

A. I have claims giving me the ridges and the grooves.

Q. I am not talking about your claims. The court will interpret the patents. I am asking what you are complaining of, that is, your understanding of it? [59]

A. My understanding of it is that I own in my patent here, I own the use of rubber surface or rubber rollers for throwing material.

Q. Now, have you ever performed any tests or any experimental work to determine whether a smooth rubber roller would function in this regard?

A. I have thrown material with smooth rubber.

Q. Did you test the life quality of it?

A. I have never had what you call a real smooth roller large enough. I have had rollers, but I have never had one large enough to handle materials of this nature and test it. I have had it semi, almost smooth, but not quite smooth. They have little grooves in it. Like I say, I tried to use the product cheapest to my pocketbook. I used war surplus products. There were some grooves and

Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

I shaved them down with a razor and tried to bring them down smooth. Then I have made little cuts in them, and different things like that.

Q. From your experience, would you say there was any difference in the wearing qualities of rubber rollers whether they were treaded or whether they were smooth?

A. Well, the only wear that I have is what is natural. When you feed material between two surfaces, it's a natural thing for material to get in there and have abrasion. Rubber is the most resistant to abrasion that I know of.

Q. Have you made any tests to show that it is a fact [60] that if the rubber roller is made smooth, that its wearing qualities are considerably less than the wearing qualities of wire brushes?

A. I haven't compared—I haven't thrown any material with a wire brush, so I have not had experience with wire brushes, except what I have seen at the yard there. \* \* \* \* \*

Q. Is there any degree of resiliency of that rubber roller necessary to perform these functions that you claim for rubber?

A. That's something that I am allowed, I believe, in my patent, to have various kinds of rubber, whatever rubber can be produced, or whatever resilient material can be produced that would do the job as I want it done, and at the most efficient cost, I think that would be what I am entitled to have. [61]

## Defendant's Exhibit M—(Continued)

(Deposition of Spencer A. Earnshaw.)

Q. In other words, you believe you are entitled, and that's the basis of your complaint, to a monopoly on the idea of using rubber of any degree of hardness in lieu of wire brushes in these machines?

A. I believe so, yes.

\* \* \* \* \*

Q. Would you say that substituting the rubber brushes [62] for the wire brushes in the Brend machine was an improvement on the Brend machine?

A. I have heard that American Pipe quit using wire brushes about seven years ago, somewhere around '48, and the reason they quit was because it was less expensive to use the rubber roller compared to the wire brush.

Q. And would you consider that to be an improvement on the Brend machine, that substitution?

A. The cost of producing an item, I guess, is very important.

Q. Let's answer the question. Would you consider the substitution of rubber brushes for the wire brushes to be an improvement on the Brend machine?

A. I would consider it an infringement on my patent.

Q. I am not asking whether you consider it an infringement.

A. That's what I consider. I consider that they are infringing my patent when they introduced the rubber rollers into the Brend machine.

Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

Q. I think we understand your position rather thoroughly in that regard. I am asking you, is the substitution of rubber brushes for wire brushes in the Brend machine an improvement in the Brend machine? [63]

\* \* \* \* \*

Q. Now will you answer my question: Did the substitution of the rubber rollers for the wire brushes in the Brend machine improve the Brend machine, in your opinion?

A. Well, I don't know.

Q. You don't know whether it improved it or not?

A. I don't. But according to cost, and according to what Mr. Jenkins made this proposition to me, he could save [64] money by using the rubber in preference to the wire.

Q. Who told you that?

A. Mr. Jenkins.

Q. Which Jenkins? A. H. H. Jenkins.

Q. When did he tell you that?

A. After I had shown him my patent, this patent No. 2639943.

\* \* \* \* \*

Q. Now, in your Complaint, Paragraph VII toward the bottom, you state, "That said agreement further provides that if either plaintiff or defendant invents any improvements on the processes and methods of Patent No. 2168329, which, in the judgment of defendant are applicable to the manufac-

## Defendant's Exhibit M—(Continued)

(Deposition of Spencer A. Earnshaw.)

ture of lining or coating of pipe, that said improvement shall inure to the benefit of both parties on the terms set forth in said agreement, and that defendant would pay the costs of patenting the same; that plaintiff invented and received patents on improvements to the process and methods of said patent, but defendant did not pay the costs [65] of patenting the same, although defendant has had the use and benefit thereof." You recall reading that when you signed the Complaint?

A. Yes.

Q. Now, what patents did you specifically have in mind there; these improvement patents, Mr. Earnshaw, the three in front of you?

A. This one here I have in mind (indicating).

Q. That's No. 2639943.

A. This up-and-down method, where they coated their pipe, even though they had the wire brushes in, they used the elevator to raise and lower it. I have the elevator in my patent.

Q. What elevator are you referring to that they use?

A. They have a machine there that they raise and lower. A man rides on it. It's rather a huge machine, and they feed material—I have never been up close to the machine, but they throw material on pipe that stands on end.

Q. Out at American?

A. Yes. So they have had the use of this elevator method since I explained it to them.



Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

Q. You had the elevator method in a sense in your first patent, didn't you, your 1939 patent?

A. Not in the same sense, no. When you raise a belt up, you are starting from a pivot point and it goes up at [66] an angle. This machine was built to strike a surface at right angles at various heights, and that makes a difference. It also says that you can strike a surface at different angles from various heights.

Q. So that is one patent that you say that we have used the improvements. You have two other patents. Referring to '942, does American use any of the things disclosed in that patent?

A. Yes, American is using this method here. This is a rubber-surface roller that's on the belt.

Q. You already have a rubber-surface roller in '943. Do you have it again in '942?

A. We have it on the belt right here (indicating).

Q. On the belt?

A. Yes, we have a rubber surface roller on the belt there.

Q. That's the only similarity between what is shown in that patent and what American does?

A. We have the ridges on the rubber. That is similar—

Q. That's in the '943 patent?           A. Yes.

Q. Let's stay with '942. What other things does American use in '942 outside of the rubber belt?

Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

A. The rubber roller on the belt—well, it's a multiple number of units put together to make a roller. That's what they do in their—they put the units together [67] to make up a roller. That's what I have done in this case, and I have done it in this case (indicating).

Q. Is there any difference between putting wire brush units together to make up a roller and putting rubber units together to make up a roller?

A. Well, I have never seen the rubber brush put together in units.

Q. You did see the wire brush put together in units as early as 1944, didn't you?

A. I didn't know it was put together as units. I thought it was all one unit.

Mr. Brown: Are we talking about the right patent? You said " '942."

Mr. Mellin: Yes; he referred to that and said, as I recall his testimony, that what we used of that—

The Witness: No, wait a minute. This is '942. We have got the wrong one. This is '25.

Q. (By Mr. Mellin): This is 2681725. What does American use that's shown in that patent?

A. Like I say, they use this rubber roller that's on the belt here. It's put together in units. That's a rubber-surface roller, and it grips material. Now, that gives material velocity, that roller on that belt gives material velocity, and it is rubber.

Q. The only thing you complain of in that pat-

## Defendant's Exhibit M—(Continued)

(Deposition of Spencer A. Earnshaw.)

ent, which is '942, the last three numbers, is that American uses [68] a stack of rubber brushes in lieu of one solid rubber roller?

A. This here patent is an improvement on the original belt patent in effect in that it can be raised or lowered to strike the surface at different angles, and it is an improvement on the belt patent from those various improvements that it has, and therefore, it was agreed to be paid for by American if I made any improvements in a belt machine; and this is a belt machine.

\* \* \* \* \*

Q. What do they use of Patent '942?

A. Well, this elevation method, where they have introduced the brushes in the elevator for coating of pipe that stand on end.

Q. You have that in '943, too, haven't you?

A. I have the elevator in all of those. [69]

Q. In all of your patents? A. Yes. [70]

\* \* \* \* \*

/s/ SPENCER A. EARNSHAW,  
(Signature of the Witness.)

Subscribed and sworn to before me this 20th day of February, 1957.

[Seal] /s/ J. BEMENT,  
Notary Public in and for the County of Los Angeles, State of California. [74]

Defendant's Exhibit M—(Continued)  
(Deposition of Spencer A. Earnshaw.)

State of California,  
County of Los Angeles—ss.

I, Ben A. Bell, C.S.R., a Notary Public within and for the County of Los Angeles and State of California, do hereby certify;

That prior to being examined, Spencer A. Earnshaw, the witness named in the foregoing deposition was by me duly sworn to testify the truth, the whole truth and nothing but the truth;

That said deposition was taken before me pursuant to stipulation, at the time and place therein set forth, and was taken down by me in shorthand and thereafter transcribed into typewriting under my direction and supervision;

That it was stipulated by counsel that said deposition may be read, corrected and signed by the witness before any notary public in and for the County of Los Angeles, State of California.

I further certify that I am neither counsel for nor related to any party to said action, nor in anywise interested in the outcome thereof.

In Witness Whereof, I have hereunto subscribed my name and affixed my seal, this 22nd day of March, 1957.

[Seal]     /s/ BEN A. BELL,  
Notary Public in and for the County of Los Angeles, State of California. [75]

[Endorsed]: Filed March 22, 1957.

## DEFENDANT'S EXHIBIT "N"

[Title of District Court and Cause.]

DEPOSITION OF HUGH FOSTER  
KENNISON

Deposition of Hugh Foster Kennison, taken on behalf of the defendant and Counterclaimant, pursuant to the attached notice, before Francis H. Bremer, Certified Shorthand Reporter and Notary Public, in and for the State of New Jersey, at Room 934, 24 Commerce Street, Newark, New Jersey, at 10:00 o'clock a.m., Tuesday, March 19, 1957.

Appearances: Mellin, Hanscom & Hursh, Attorneys for defendant, by Oscar A. Mellin. [1]\*

## HUGH FOSTER KENNISON

called and sworn on behalf of the defendant, testified as follows:

## Direct Examination

Q. (By Mr. Mellin): Will you give your name in full, your residence address and your age?

A. Hugh Foster Kennison, Avon Drive, Essex Fells, New Jersey, age 40.

Q. And what is generally your training; I mean, are you an engineer?

A. Yes, I am a civil engineer, graduate of M.I.T. in 1939.

Q. And what is your occupation?

A. I am engineer for Lock Joint Pipe Company.

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\* Page numbers appearing at top of page of Original Deposition.



Defendant's Exhibit N—(Continued)  
(Deposition of Hugh Foster Kennison.)

Q. And what is their address?

A. 150 Rutledge Avenue, East Orange, New Jersey.

Q. And what is their business, generally?

A. Their business is the manufacture of reinforced concrete pipe, which also includes pre-stressed pipe, mainly for water supply use.

Q. Will you state whether or not during the past years you have manufactured any pipe by a process which includes the spraying of a cementitious material on a steel pipe?

A. I presume you mean on a pipe with steel in it.

Q. Yes.

A. Yes, all of our pre-stressed pipe manufactured in certain sizes uses a sprayed-on mortar, cement mortar coating. This probably represents, in total, several thousand miles of pipe. [2]

Q. And then it becomes a sort of a steel core and a cement coating on the outside, or cement-mortar coating?

A. Yes.

Q. When did you first build a machine for spraying pipe of that character, if you know?

A. In 1940 and approximately '41.

Q. By the way, how long have you been with Lock Joint Pipe Company?

A. Since 1939.

Q. At that time, or sometime thereafter, did Lock Joint Pipe Company manufacture a machine now known as the Brend Machine?

A. Yes.

Q. I show you a drawing numbered B-1-413,

## Defendant's Exhibit N—(Continued)

(Deposition of Hugh Foster Kennison.)

dated January 23, 1942. Are you familiar with that drawing?      A. Yes.

Q. And what does that drawing depict, just generally?

A. This is a profile of the Brend type coating machine through the worm and brush housing assembly.

Q. And I show you a second drawing numbered B-1-418, dated February 24, 1942. Do you recognize that drawing?

A. Yes, this is the same machine, but a vertical view, and sectional view, of the brush assembly and brush mounting.

Q. And where it says, "Osborn Masterwheel Brushes 10" Dia., No. 152-25," is that what you are terming the brush of the machine?

A. Yes. [3]

Q. Is that in one unit or is it made up of a number of brushes?

A. It is made up of a number of brushes.

Q. Arranged axially and bolted together?

A. Yes.

Q. And I show you a third drawing, labeled B-1-413A, dated May 14, 1943. What is that?

A. This is a revision of the original drawing, B-1-413, with some minor technical revisions relating to wheel assembly, and so forth.

Q. When was that machine built that was depicted on these drawings, to your knowledge?

A. This machine was built just after these draw-

## Defendant's Exhibit N—(Continued)

(Deposition of Hugh Foster Kennison.)

ings were dated, and prior to the latter part of 1942.

Q. And these drawings were made at the time, to your knowledge, the time that they were dated, or completed at that time? A. Yes.

Q. And you brought them here from the files of the Lock Joint Company, did you? A. Yes.

Q. Now, I show you a copy of the Brend Patent, No. 2,380,499, which was heretofore identified in this litigation as American Pipe Exhibit 2 to the Earnshaw deposition. Do you recognize the machine depicted in that patent? A. Yes.

Q. And is or is not that the machine that is illustrated in the drawings to which you have just testified? [4]

A. Basically, it is the same machine.

Q. Is there any substantial difference at all, except in dimensions of parts?

A. There is a slight difference in the mounting, the drive of the brushes. In this patent it is pictured being driven by one motor. I believe in this machine, although it may not be shown——

Q. You mean the machine in the drawings, B-1-413, B-1-418 and B-1-413A?

A. Particularly the revised drawing, B-1-413A—the drive is a little different, but essentially the same, for the brushes.

Q. The brush operation of spraying the pipe is the same or different? A. It is identical.

Defendant's Exhibit N—(Continued)  
(Deposition of Hugh Foster Kennison.)

Q. And those brushes, how were they made in the machine that you manufactured at the time?

A. We purchased Osborn brushes. And this number you referred to is their manufacturing number.

Q. That is that 152-25? A. Yes.

Q. And they are still wire brushes, are they?

A. Yes, pre-mounted in the hubs. And the picture illustrates the use of five brushes per roll.

Q. Those were counter-rotating brushes, as shown in the patent that we have just mentioned, No. 2,380,499? A. Yes.

Mr. Mellin: At this time I will offer drawing B-1-413, B-1-418 and B-1-413A in evidence as American [5] Pipe Exhibits to the Kennison deposition 1, 2 and 3.

And I will offer a copy of the Brend Patent, No. 2,380,499 as American Pipe Exhibit 4 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibits 1, 2, 3 and 4 for identification.)

Q. Would you state whether or not the wire brushes operated successfully to spray the concrete on pipe in the machines you built in late '42 and '43? A. Yes.

Q. And at that time did you try any brushes of any different construction, that time or later?

A. At that time we tried different brushes of various wire brush manufacturers to get better life.

Defendant's Exhibit N—(Continued)  
(Deposition of Hugh Foster Kennison.)

Q. What do you mean by better life, Mr. Kennison?

A. Longer usage per dollar cost of brush. That is, we investigated some very high quality brushes, very expensive brushes, on the assumption that we would get more yardage through the machine before the brushes were worn out.

Q. And at that time or thereafter did you try brushes of any other material, other than wire?

A. At a later period we tried brushes of rubber.

Q. And that was about when, as you recall?

A. Early to the middle part of 1946.

Q. Now, I show you what purports to be a drawing on the drawing paper of Lock Joint Pipe Company, which is dated [6] 5-21-46, and ask you if you can identify it.

A. Yes, this illustrates one of the rubber brushes that was used on the machines.

Q. And that was used in lieu of the brushes illustrated on drawing B-1-418?

A. Yes, this was a direct replacement on that machine.

Q. And would you briefly describe the rubber brush shown in this drawing, which you have just identified, that is, the drawing dated 5-21-46?

A. This was a steel drum in which a one inch thick rubber layer was placed around its periphery.

Q. Was that vulcanized on or not?

A. Yes, it was vulcanized on by the Manhattan



Defendant's Exhibit N—(Continued)  
(Deposition of Hugh Foster Kennison.)  
Rubber Company. And we grooved it, as shown, with a tire-grooving machine.

Q. That was grooved longitudinally, as illustrated in this drawing? A. Yes.

Q. And do you know whether those brushes were actually made?

A. They were actually made and were used.

Mr. Mellin: I will offer the photostatic copy of the drawing in evidence as American Pipe Exhibit 5 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibit 5 for identification.)

Q. I notice this is a photostat of a drawing, rather than the original. Can you explain that?

A. In the [7] past few days we have tried to locate the original. Since it was not given a drawing number, those drawings have been kept in a miscellaneous file drawer as sketches. We were not able to locate the original.

Q. I notice on here there is noted the notation, "Attention W. L. White." Do you recognize that printing?

A. Yes, this is my own handwriting. And this drawing was transmitted to Manhattan Rubber. Mr. W. L. White at that time was, and I believe still is, employed by Manhattan.

Q. I hand you a carbon copy of a letter addressed to Manhattan Rubber Company, Passaic, New Jersey, attention W. L. White, dated May 21, 1946. What is that letter?

Defendant's Exhibit N—(Continued)  
(Deposition of Hugh Foster Kennison.)

A. This is a letter that I wrote transmitting the sketch.

Q. Exhibit 5?

A. Exhibit 5. To the Manhattan Rubber Company. This is the basis of their work in putting the rubber covering on our steel drum, which we manufactured.

Q. In other words, to fabricate the rollers shown in Exhibit 5?      A. Yes.

Q. And this carbon copy of the letter came out of your files?      A. Yes.

Mr. Mellin: I will offer that in evidence as American Pipe Exhibit 6 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibit 6 for identification.)

Q. Did you give them an order at that time to [8] manufacture it?

A. Yes, we gave them an order, Order No. 2259. That is Lock Joint Pipe Company purchase order.

Q. And you have with you a photograph of that order?      A. Yes.

Q. Would you explain why it is a photograph rather than the original order?

A. Several years ago all of our records were put on microfilm. This is a photograph from that microfilm record.

Q. And the originals were destroyed, were they?

A. Yes, the originals were destroyed.

Q. And is that the order for them to produce

## Defendant's Exhibit N—(Continued)

(Deposition of Hugh Foster Kennison.)

the device shown in Exhibit 5, the rubber-covered drum that had grooves in it?

A. Yes, it speaks of 2 steel tubes to be rubber coated 8" O.D. by 8" long.

Q. Did you subsequently receive the original of the order that was sent to Manhattan?

A. Yes.

Q. And this the one that I have in my hand?

A. Yes.

Q. And that is the original of the order which was photographed, which you just produced?

A. From our files, yes.

Q. And you obtained that from Manhattan Rubber Company recently?

A. Recently, just before they were going to destroy their order.

Mr. Mellin: I will offer the original of that [9] order, 2259, in evidence as American Exhibit 7 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibit 7 for identification.)

Mr. Mellin: And I will offer the photograph of the copy of the order which was in the hands of Lock Joint Pipe Company as American Exhibit 8 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibit 8 for identification.)

Q. I show you a document which states, "2 sleeves to cover metal cylinders," and ask you if

## Defendant's Exhibit N—(Continued)

(Deposition of Hugh Foster Kennison.)

that was likewise received from Manhattan Rubber Company?

A. Yes, we obtained it from Manhattan relative to the rubber brushes.

Q. Relative to the same transactions that we have been referring to? A. Yes.

Mr. Mellin: I will offer that as American Exhibit 9 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibit 9 for identification.)

Q. Now, will you state whether or not those rubber-covered drums were or were not actually built about at the time that we are speaking of in '46?

A. Yes, they were actually built, and they were returned to us, and we ran—or produced some pipe with those brushes on June 13 [10] and 14 of 1946.

Q. What became of the pipe, was it sold or destroyed, or stored?

A. Some of the pipe may have been—the coating may have been removed; other pipe, that were satisfactory, were actually sold.

Q. And those rubber brushes were installed on a machine substantially the same as the machine shown in the Brend Patent, Exhibit 4?

A. Yes, essentially the same, on a production machine.

Q. And they were substituted for the two wire brushes shown in Fig. 2 of that patent?

A. Yes.

Defendant's Exhibit N—(Continued)  
(Deposition of Hugh Foster Kennison.)

Q. And for the same or a different function and purpose?

A. For exactly the same purpose.

Q. What results did you obtain from those brushes, the rubber-coated ones that you are speaking of?

A. We ran a pre-measured amount of mortar through them, and accurately measured the wear on each brush. This information was recorded and plotted to produce a wear curve.

Q. Do you have those with you? A. Yes.

Q. Are these the documents that I hand you now?

A. Yes, these are the originals, and there is a copy of them.

Q. And who were they made by?

A. The tests were made by myself.

Q. And these are in your own handwriting? [11]

A. Yes.

Mr. Mellin: I will offer the originals of those notes in evidence as American Exhibits 10 and 11 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibits 10 and 11 for identification.)

Q. I hand you a letter on the letterhead of Raybestos-Manhattan, Inc., dated June 10, 1946, which says this, in part, "We have shipped you under our Order 2725-CNY under date of June 5 the



## Defendant's Exhibit N—(Continued)

(Deposition of Hugh Foster Kennison.)

rubber-covered steel drums which you sent us.”  
What does that refer to?

A. This refers to the same rubber-covered drums we have been discussing and which were tested.

Q. That is, the ones shown on Exhibit 5, the sketch?  
A. Yes.

Q. And those are the ones you actually used in the machine?  
A. Yes.

Q. And what was the reason why you were testing rubber-coated drums in lieu of wire brushes, if there is a reason?

A. We were always looking for more economical means of producing pipes, and it was felt that rubber might have some advantage in this particular application.

Mr. Mellin: At this time I will offer the letter just identified by the witness in evidence as American Exhibit 12 to the Kennison deposition. [12]

(Marked Kennison Deposition American Pipe Company Exhibit 12 for identification.)

Q. And this letter of June 10th we have just been referring to came out of the Lock Joint files?

A. Yes.

Q. After you tested the rubber-coated brushes, as shown in Exhibit 5, as you have testified, what, if anything, did you do further in connection with rubber-coated brushes?

A. Well, the tests indicated that the brushes would be—or might be of advantage if we had

## Defendant's Exhibit N—(Continued)

(Deposition of Hugh Foster Kennison.)

greater allowance for depth of wear. These brushes we have just talked about only allowed for about  $\frac{1}{2}$ " of radial wear. So later that year, we designed a new housing in which we could put in rubber vanes. This housing is illustrated on drawing B-1-567, dated 8-15-46.

Q. That is the drawing we have in front of us?

A. Yes.

Q. Will you tell us more about that, please?

A. As you can see from the drawing, we were allowed here about an inch and a quarter wear.

Q. That is, radially?

A. Radial wear. We obtained some material from Manhattan, sheets of rubber,  $\frac{1}{2}$ " thick by 5" wide, which we formed into the shape shown, the U-shaped vane.

Q. And I hand you what appears to be a photograph [13] of purchase order 3236. What is that?

A. This is the purchase order for that flat strip of rubber  $\frac{1}{2}$  by 5, which we cut to special length and made the vanes similar to that illustrated on B-1-567.

Q. And the reason that you have a photograph of the order is because you have destroyed the records, you previously testified?

A. Yes, these are from our microfilm record.

Mr. Mellin: I will offer that in evidence as American Exhibit 13 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibit 13 for identification.)

## Defendant's Exhibit N—(Continued)

(Deposition of Hugh Foster Kennison.)

Q. Go ahead, Mr. Kennison.

A. This rubber was used, but it had a very poor fit in forming it into a U-shape.

Q. That is, into the socket which held it?

A. Into the socket of the hub assembly. Pipe were made with this mechanism, but we found that due to centrifugal force, one leg of the extended U would extend and the other would come in, due to difference in weight of each of the arms of the U. As a result, this was redesigned. Drawing B-4-129, dated December 6, 1946, illustrates an extruded rubber shape for rubber vane coating brush. This was designed so that it could not be dislodged due to centrifugal force. And it was a pre-formed shape as [14] opposed to our earlier attempt at rubber vanes.

Q. Was that actually built?

A. This was actually built and used.

Q. And used on a Brend type of machine, of the type we have been discussing?      A. Yes.

Q. And did it operate satisfactorily, except for wear, if it did not operate satisfactorily for that purpose?

A. It operated well enough to make several pipe. We did realize at that time, though, that again centrifugal force was stretching the rubber and we were getting some interference. At that time we discussed putting reinforced wire mesh in this extruded shape. But this was never actually tried.

Defendant's Exhibit N—(Continued)  
(Deposition of Hugh Foster Kennison.)

Q. And approximately when were those brushes built and used, if you know, Mr. Kennison?

A. They were designed in December of '46, and tests were conducted sometime after that date, but prior to March of 1947.

Q. Now, I show you what appears to be a bill dated March 3, 1947, on the letterhead—or billhead of the Manhattan Rubber Manufacturing Division. Can you explain what that is for?

A. Yes, this is the bill from Manhattan to Lock Joint for the cost of the die and the curing form to produce the section described in drawing B-4-129.

Mr. Mellin: I will offer B-1-567 as American [15] Exhibit 14 to the Kennison deposition and B-4-129 as American Exhibit 15 to the Kennison deposition, and the copy of the bill of March 3, 1947, to which the witness testified, as American Exhibit 16 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibits 14, 15 and 16 for identification.)

Q. What was your ultimate conclusion, if you arrived at any, with respect to the use of rubber-coated drums of the types you have mentioned as compared with the wire brushes that you were using?

A. We felt that the cost of brush per cubic yard of mortar placed was more or less the same. At the same time, we were negotiating with several of the larger wire brush manufacturers for improved

## Defendant's Exhibit N—(Continued)

(Deposition of Hugh Foster Kennison.)

quality and price reduction, due to our quantity use of the brushes. This negotiation with the wire brush people was successful, so we concluded our experiments on the presumption we could get cheaper placement of mortar by using steel brushes, as well as the fact that we felt the brush people could produce in the future cheaper and better brushes for this particular use.

Q. Was there any difference in function of actually spraying the concrete on the pipe as between the rubber brushes that you referred to and steel brushes?

A. No, they were more or less similar. [16]

Q. And one didn't spray the material any better or any faster than the other; is that what I understand by that answer?

A. Well, on some pipe we did notice that the rubber brush gave a slightly smoother coating. However, it had more rebound, that is, more mortar was thrown through the brushes, but did not land on the pipe, only on the floor. This was wasted and was contributing to the high cost of rubber brush per mortar placed on a pipe.

Q. Did you at any time have the experience, using the rubber brushes, of a piece of aggregate or larger piece of solid material going between the brushes?

A. Yes, occasionally hardened pieces of mortar would get mixed in with the mortar and be discharged through the brushes. With the rubber



## Defendant's Exhibit N—(Continued)

(Deposition of Hugh Foster Kennison.)

brushes there was little clearance or flexibility and the rubber was chewed up, hunks of rubber removed from the brush.

Q. Did you ever have that happen with wire brushes? A. Yes.

Q. What happens?

A. The wire just parts, the material goes through and the wire is not damaged—the wire brush is not damaged.

Q. Now, ever since that time, that is, since 1946 or 1947 you have continuously used machines having brushes for this same function and purpose?

A. Yes.

Q. And, as I understand it, you have about 15 of [17] them with counter-rotating brushes in operation at this time. A. More or less.

Q. And they all use wire brushes, do they, or brushes of some other character?

A. They all use wire brushes. In the past few years, we have had a few with steel vanes, using a similar principle to that shown on drawing—

Q. B-1-567?

A. Yes, B-1-567. —excepting they are fixed steel fins, counter-rotating.

Q. Do they work satisfactorily or not?

A. They have been used on several jobs, but it is felt that the wire brush is more economical due to proper balance. The steel vanes have to be constantly kept in balance.

Defendant's Exhibit N—(Continued)  
(Deposition of Hugh Foster Kennison.)

Q. Now, I hand you two photographs, and would you tell us what they depict, please?

A. These photographs were taken during 1942 or 1943 and illustrate the first use of the Brend Coating Machine for coating pipe on a water pipe line contract. This contract was for the City of Hyattsville, Maryland. The pipe plant was erected in or near Hyattsville. It is pre-stressed pipe, 30" diameter. It is recognized, and the job is of historical note, because it is the first pre-stressed pipe line built in this country.

Q. And that machine depicted in those photographs is substantially the same, except in minor details, with [18] the Brend Patent, which we have been referring to?      A. Almost identical.

Mr. Mellin: I will offer those photographs in evidence as American Pipe Exhibits 17 and 18 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibits 17 and 18 for identification.)

Q. Are you familiar generally with the Earnshaw Patent, No. 2,168,329?      A. Yes.

Q. And how did you become familiar with that, generally?

A. The Lock Joint Pipe Company has an agreement with Earnshaw for the use of a machine employing a belt feed for placing mortar on a pipe.

Defendant's Exhibit N—(Continued)  
(Deposition of Hugh Foster Kennison.)

Q. And prior to August of 1956, did you ever build any such machine? A. No.

Q. That license agreement that you refer to, did that call for payment of unit royalty, if you know?

A. Yes, I believe there was an annual payment.

Q. If you used the machine, did it call for a royalty of so much per square foot?

A. Yes, so much per foot or square foot.

Q. Did you ever make any machines on which you paid royalties to Earnshaw? A. No.

Q. And you only paid him this hundred dollars a month minimum that you referred to?

A. Well, the [19] minimum, whatever it was.

Mr. Mellin: I will offer a copy of the Earnshaw patent just referred to in evidence as American Pipe Exhibit 19 to the Kennison deposition.

(Marked Kennison Deposition American Pipe Company Exhibit 19 for identification.)

Mr. Mellin: It is now 10:50, and there still has been no appearance from the other side, so we will close the deposition at this time.

3/21/57.

/s/ HUGH FOSTER KENNISON.

#### Certificate of Notary Public

I, Francis H. Bremer, a Notary Public and Certified Shorthand Reporter, do hereby certify that Hugh Foster Kennison appeared before me on the 19th day of March, 1957, at Room 934, 24 Com-

## Defendant's Exhibit N—(Continued)

(Deposition of Hugh Foster Kennison.)

merce Street, Newark, New Jersey, having been duly sworn, made the foregoing deposition, and said deposition is a true record of the testimony given by the witness.

[Seal]     /s/ FRANCIS H. BREMER,  
Notary Public. My Commission Expires 12/28/58.

[Endorsed]: Filed March 25, 1957.





## DEFENDANT'S EXHIBIT "S"

(Copy)

May 21, 1946.

Manhattan Rubber Company,  
Passaic, New Jersey.

Attention: Mr. W. L. White.

Gentlemen:

In regard to our telephone conversation, you will find enclosed a sketch illustrating the rubber brushes for the coating machine. The two steel drums have been sent to your attention this afternoon, and if you will apply the 1" band of rubber as illustrated and vulcanized on to the steel tubing, we shall groove the band as illustrated.

If you have any further questions in regard to this, we shall be pleased if you would telephone us. We would appreciate as prompt action as possible on this job.

Yours very truly,

LOCK JOINT PIPE COMPANY,

Hugh F. Kennison,  
Design Engineer.

HFK:BR

Enclosure.



## DEFENDANT'S EXHIBIT "Y"

Raybestos-Manhattan, Inc.  
Manhattan Rubber Division  
Passaic, New Jersey

Please Reply Attention of Writer

June 10, 1946

Lock Joint Pipe Company  
P. O. Box 269  
East Orange, N. J.

Attention: Mr. Hugh F. Kennison, Design Engineer  
Gentlemen:

We have shipped you under our order 2725-CNY under date of June 5 the rubber covered steel drums which you sent us. We trust that this is in line with the type of thing that you had in mind and we will be glad to learn whether or not this rubber covering meets your requirements.

If there is anything else that we can do for you in connection with this development, we will be only too happy to cooperate.

Very truly yours,

MANHATTAN RUBBER DIVISION  
William L. White,  
Director of Research and  
Product Design.

SLD



## DEFENDANT'S EXHIBIT "AH"

American Pipe and Construction Co.

August 9, 1956

Stamped—Received 9:30 A.M., August 11, 1956.

Mr. Spencer A. Earnshaw  
132 East 77th Street  
Los Angeles, California

Dear Sir:

We call your attention to your agreement with this Company dated February 8, 1944, entitled "Option Agreement."

Patent #2,168,329 referred to therein having expired at midnight of August 8, 1956, said agreement likewise expired at the same time.

Please regard this letter as formal notice of termination of said Option Agreement.

Yours very truly,

G. Crawford,  
Secretary-Treasurer.

GC:mh

bcc: Mr. F. D. MacDowell  
Hill, Farrer & Burrill

Registered \* Return Receipt Requested.



## DEFENDANT'S EXHIBIT "AI"

J. Marion Wright  
Attorney-at-Law

August 24, 1956

Stamped—Received 9:30 A.M., August 25, 1956.

American Pipe and Construction Co.

P. O. Box 3428

Terminal Annex

Los Angeles 54, California

Attention: G. Crawford, Secretary-Treasurer

In re: Earnshaw v. American Pipe

Gentlemen:

Reference is made to your photostat copy of letter dated August 9, 1956, sent by registered mail to Mr. Spencer A. Earnshaw, calling attention to your agreement with him dated February 8, 1944, and stating that Patent No. 2,168,329 referred to therein having expired at midnight August 8, 1956, that said agreement likewise expired at the same time.

Please be advised that said agreement of February 8, 1944, provides that if either American Pipe or Earnshaw invents any improvements to the processes and methods of Patent No. 2,168,329 which, in the judgment of American are applicable to the manufacture, or lining, or coating of pipe, the said improvements shall inure to the benefit of both parties, on the terms set forth in said agreement,

and American will pay for the costs of patenting same. Mr. Earnshaw secured patents on improvements to the processes and methods of said patent and although you did not pay for same your attention was called to such improvements, and copies of the patented improvements were given you and you have been using said improvements and under such circumstances the original patent does not terminate nor does the agreement of February 8, 1944, terminate as long as you are using said improvements and until the expiration of the patent on same.

Therefore, Mr. Earnshaw cannot regard your letter as formal notice of termination of either the patent or the option agreement.

Very truly yours,

J. MARION WRIGHT.

JMW:vs

cc: Mr. J. Calvin Brown

Messrs. Hill, Farrer & Burrill

Frank D. MacDowell

Mellin, Hanscom & Hursh

Oscar A. Mellin



## DEFENDANT'S EXHIBIT "AJ"

J. Marion Wright  
Attorney-at-Law

August 27, 1956

Stamped—Received 9:30 A.M., August 28, 1956.

American Pipe and Construction Co.

P. O. Box 3428 Terminal Annex

Los Angeles 54, Calif.

Attention: G. Crawford, Secretary-Treasurer

Re: Earnshaw v. American Pipe, etc.

Gentlemen:

Reference is made to my letter of August 24, 1956 in connection with the above matter. I find that through inadvertence the letter is not correct, and I wish to correct it as follows:

Mr. Earnshaw did not secure patents on improvements to the processes and methods of the patent, but secured improvement patents to No. 2,168,329 on the machine under which you have a license. Copies of said patented improvements were given you and you have been using said improvements. The patent did terminate on August 8, 1956, but the contract carries on as long as you are using said improvements and until the expiration of the patent on same.

Therefore, Mr. Earnshaw cannot regard your letter as a formal notice of the termination of the option agreement.

Very truly yours,

J. MARION WRIGHT.

JMW B

cc: to Mr. J. Calvin Brown

Messrs. Hill, Farrer & Burrill

Frank D. MacDowell

Mellin, Hanscom & Hursh

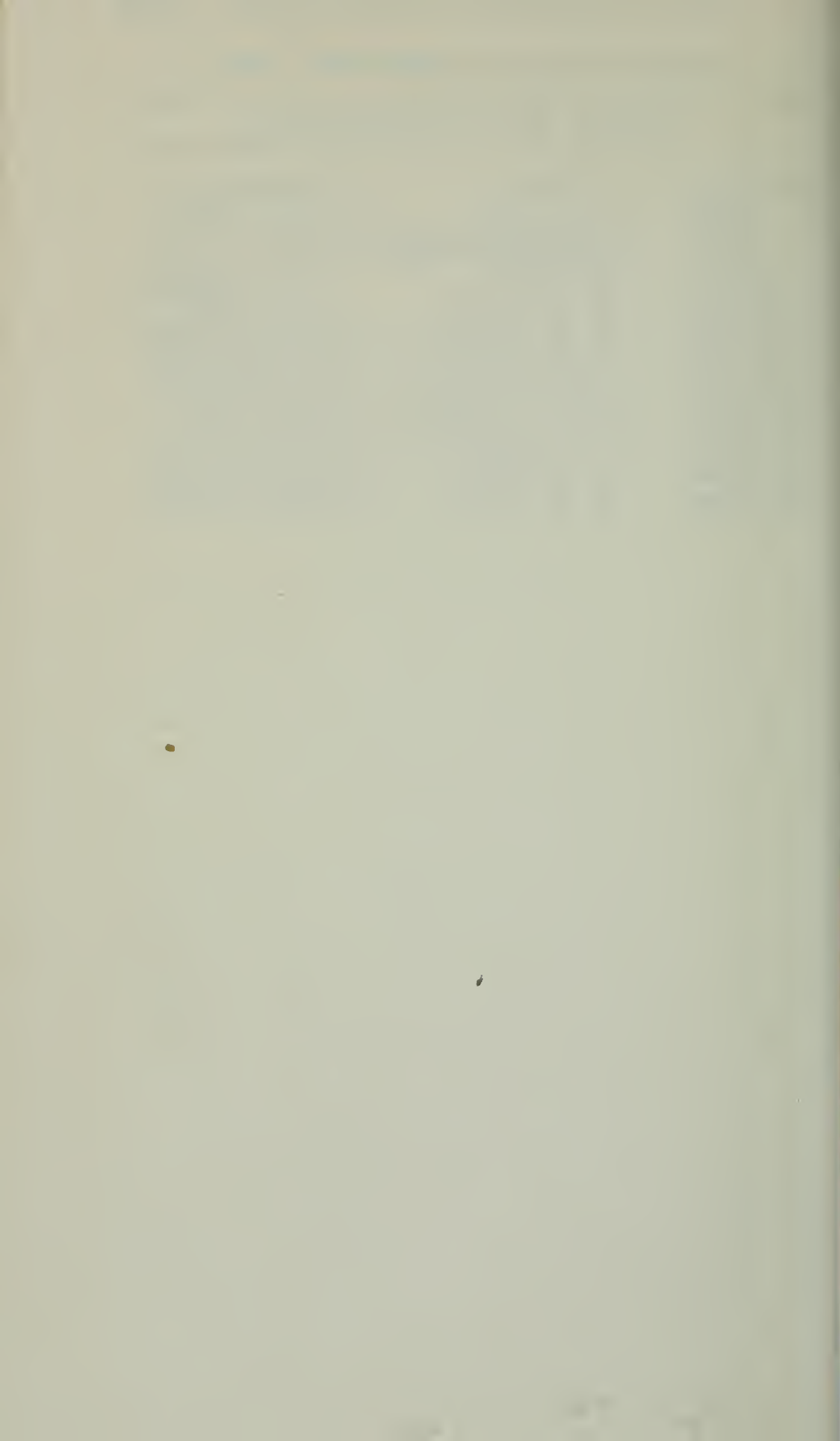
Oscar A. Mellin



## DEFENDANT'S EXHIBIT "AK"

## PRIOR ART RELIED UPON

Patent No.	Inventor	Patented
15,280	C. N. Clow	July 8, 1856
21,102	J. D. Willoughby	Aug. 3, 1858
250,976	H. Riedel	Dec. 13, 1881
2,368,742	W. R. Brend	Feb. 6, 1945
2,380,499	W. R. Brend	July 31, 1945
2,451,603	V. D. Barker	Oct. 19, 1948
2,530,767	W. W. Hamill	Nov. 21, 1950
2,550,781	R. R. Colburn	May 1, 1951
2,554,637	C. A. Rerick	May 29, 1951
2,567,699	G. A. Devlin	Sept. 11, 1951
2,603,383	R. W. Wilson	July 15, 1952



No. 15,630

IN THE

United States Court of Appeals  
For the Ninth Circuit

AMERICAN PIPE AND CONSTRUCTION Co., a  
corporation,

*Appellant,*

vs.

SPENCER A. EARNSHAW,

*Appellee.*

BRIEF ON BEHALF OF APPELLANT  
AMERICAN PIPE AND CONSTRUCTION CO.

MELLIN, HANSCOM & HURSH,

OSCAR A. MELLIN,

391 Sutter Street, San Francisco 8, California,

HILL, FARRER & BURRILL,

411 West Fifth Street, Los Angeles 13, California,

*Attorneys for Appellant.*

FILED

FEB - 7 1958

PAUL P. O'BRIEN, CLERK



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No. 15,630

IN THE

**United States Court of Appeals  
For the Ninth Circuit**

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AMERICAN PIPE AND CONSTRUCTION Co., a  
corporation,

*Appellant,*

vs.

SPENCER A. EARNSHAW,

*Appellee.*

---

**BRIEF ON BEHALF OF APPELLANT  
AMERICAN PIPE AND CONSTRUCTION CO.**

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**STATEMENT OF THE PLEADINGS  
AND JURISDICTION.**

This action was commenced in the Superior Court in and for the County of Los Angeles, State of California, by the filing of a Complaint (R. 6) for \$125,000.00 alleged to be due appellee, Spencer A. Earnshaw<sup>1</sup> by appellant, American Pipe and Construction Co.<sup>2</sup> under the terms of a patent license agreement (Exhibit A to Complaint at R. 11). Earnshaw is a citizen and resident of the State of California and American is a corporation organized and existing under and by virtue of the laws of the State

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<sup>1</sup>Appellee is hereinafter designated as "Earnshaw".

<sup>2</sup>Appellant is hereinafter designated as "American".

of Delaware. (R. 61.) The action was removed to the United States District Court for the Southern District of California, Central Division, all in accordance with law. (Petition for Removal R. 3; Notice R. 17; Bond on Removal R. 18.)

The United States District Court had jurisdiction under Title 28, § 1332 U.S.C.<sup>3</sup> The trial issues were framed by the Complaint and Defendant's First Amended Answer and Defendant's First Amended Counterclaim. (R. 35.) The Counterclaim sought a judgment declaring, among other things, that American had not infringed any of the patents owned by Earnshaw, and that such patents were invalid. The District Court had jurisdiction of the cause of action set out in the Counterclaim by virtue of Title 28, § 1338 U.S.C.<sup>4</sup> and Title 28, § 2201 U.S.C.<sup>5</sup> A final Judgment (R. 66) was entered April 22, 1957, and this appeal

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<sup>3</sup>Title 28, § 1332 U.S.C.

"Diversity of citizenship; amount in controversy

(a) The district courts shall have original jurisdiction of all civil actions where the matter in controversy exceeds the sum or value of \$3,000 exclusive of interest and costs, and is between:

(1) Citizens of different States:"

<sup>4</sup>Title 28, § 1338 U.S.C.

"Patents, copyrights, trade-marks, and unfair competition

(a) The district courts shall have original jurisdiction of any civil action arising under any Act of Congress relating to patents, copyrights and trade-marks. Such jurisdiction shall be exclusive of the courts of the states in patent and copyright cases."

<sup>5</sup>Title 28, § 2201 U.S.C.

"Creation of remedy

In a case of actual controversy within its jurisdiction, except with respect to Federal taxes, any court of the United States and the District Court for the Territory of Alaska, upon the filing of an appropriate pleading, may declare the rights and other legal relations of any interested party seeking such declaration, whether or not further relief is or could be



was filed within thirty (30) days thereafter (R. 72). Jurisdiction is conferred on this Court by Title 28, § 1291 U.S.C.<sup>6</sup>

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### **THE PARTIES.**

The appellant, American Pipe and Construction Co., is a corporation of Delaware and has a place of business at South Gate, County of Los Angeles, State of California, with plants in several other states.

The appellee, Spencer A. Earnshaw, is an individual and is a resident of the County of Los Angeles, State of California, and is the patentee and owner of the four patents involved in this action.

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### **CONCISE STATEMENT OF THE CASE.**

Long prior to February 8, 1944, American had manufactured (under license from Lock Joint Pipe Company's Brend patent No. 2,380,499, Exhibit "B", R. 279) and was commercially using at its plant in South Gate, California, a machine for applying a cement mortar coating to the

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sought. Any such declaration shall have the force and effect of a final judgment or decree and shall be reviewable as such. As amended August 28, 1954, c. 1033, 68 Stat. 890."

<sup>6</sup>Title 28, § 1291 U.S.C.

"Final decisions of district courts

The courts of appeals shall have jurisdiction of appeals from all final decisions of the district courts of the United States, the District Court for the Territory of Alaska, the United States District Court for the District of the Canal Zone, the District Court of Guam, and the District Court of the Virgin Islands, except where a direct review may be had in the Supreme Court. As amended Oct. 31, 1951, c. 655, § 48, 65 Stat. 726."

exterior of steel pipe. This machine is of the double brush type known as the "Brend" machine and is the same in construction and mode of operation as the machine illustrated and described in the Brend United States Patent No. 2,380,499, issued July 14, 1945.<sup>7</sup> (Defendant's Exhibit "B", R. 279.) Also prior to February 8, 1944, Earnshaw had obtained a United States Patent No. 2,168,329, issued August 8, 1939 (R. 245), on a wall plastering machine of the belt type and was attempting to interest American in building such a machine to coat pipe. At that time American showed Earnshaw its "Brend" machine<sup>8</sup> in operation. On February 8, 1944, American, believing that Earnshaw's patented machine might have merit, entered into an agreement with Earnshaw (Exhibit A to the Complaint at R. 11), which granted American a license under Earnshaw's patent identified above.<sup>9</sup>

American never built the patented Earnshaw machine because it later determined that such a machine was impractical. (R. 204.) However, American continued to pay to Earnshaw the minimum royalty specified in the license agreement to the end of the term of Earnshaw's patent No. 2,168,329, which expired on August 7, 1956.

The "Brend" machine employed two counter rotating brushes having stiff wire bristles as the means of spraying concrete on to the exterior of pipe (see Fig. 2 of the drawings of the "Brend" machine at R. 281). The periphery of these brushes was subjected to abrasion by the fluid concrete sprayed by them and they had to be re-

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<sup>7</sup>Finding of Fact No. 4, R. 61.

<sup>8</sup>Finding of Fact No. 5, R. 62.

<sup>9</sup>Finding of Fact No. 3, R. 61.

placed with new brushes from time to time. In an endeavor to increase the length of life of the brushes, Lock Joint Pipe Company, of East Orange, New Jersey (owner of the Brend patent), substituted brushes having grooved or ribbed rubber peripheries for the wire brushes,<sup>10</sup> and informed American of that fact prior to the year 1948.<sup>11</sup> Prior to April 1948, American made rubber brushes for its "Brend" machine<sup>12</sup> and commenced using them commercially.

American believed that the rubber brushes would outwear the wire brushes, but later discovered that this was not the fact. (Butler Test. R. 148.) In fact, in its Los Angeles plant, American used one machine exclusively fitted with wire brushes and one fitted with rubber brushes. In its Portland plant is used only wire brushes, and in its other plants some machines had rubber brushes and some wire brushes. There is absolutely no change in the operation of the "Brend" machine, whether rubber or wire brushes are used, and the results in coating pipe are identical. (Butler Test. R. 164.)

Without any knowledge on the part of American and some two years after Lock Joint Pipe Company had used rubber brushes on the "Brend" machine and American had knowledge thereof, and after American had itself used rubber brushes in its "Brend" machine, Earnshaw applied, on April 30, 1948, for a patent disclosing rubber covered rollers in a belt type (as distinguished from a brush type) machine, and that patent issued on May 26,

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<sup>10</sup>Findings of Fact No. 7 and No. 8, R. 62.

<sup>11</sup>Finding of Fact No. 9, R. 63.

<sup>12</sup>Finding of Fact No. 10, R. 63.

1953 as No. 2,639,943. Earnshaw also applied for and obtained patents No. 2,639,942, dated May 26, 1953, and No. 2,681,725 on June 22, 1954, both on so-called belt types of wall plastering machines.

Some time after he applied for those patents, and again after those patents issued, Earnshaw demanded royalties from American on the "Brend" machine because of the use of the rubber brushes in lieu of the wire brushes. These demands were consistently refused. This suit was then commenced by filing a Complaint in the Superior Court for royalties due under the license agreement. On the grounds of diversity of citizenship and that the amount demanded (\$125,000.00) was in excess of \$3,000.00, American had the case removed to the United States District Court for the Southern District of California, Central Division, and filed its answer. (R. 20.) Because of the allegation of Paragraph VIII (R. 9) of the Complaint, which reads in part as follows:

"\* \* \* although plaintiff is informed and believes and therefore alleges that said defendant has continuously coated and/or lined and applied to the inside or outside of pipe of material manufactured by defendant and its subsidiaries and/or assigns, and is still coating and lining same by using the methods and process covered by plaintiff's patents. \* \* \*"

(which is a charge tantamount to a charge of infringement of Earnshaw's subsequent patents), American, to avoid a multiplicity of suits, filed an amended Counterclaim (R. 35) alleging that a justiciable and actual controversy existed between it and Earnshaw as to whether the acts of American came within the scope of Earn-



shaw's patents and infringed the same, and thus raised the issues of the validity of Earnshaw's patents and whether the same had been infringed by American. Earnshaw answered the amended counterclaim (R. 51 and the case proceeded to trial on the issues raised by the Complaint (R. 6) and amended Answer (R. 35) and the amended Counterclaim (R. 44) and Answer to First Amended Counterclaim (R. 51).

The District Court found as fact<sup>13</sup> that the substitution of rubber brushes for wire bristle brushes in the "Brend" machine did not originate with Earnshaw but with Lock Joint Pipe Company. The District Court also found as a fact<sup>14</sup> that American had not used in its operations any novel features brought to the art in any of Earnshaw's three subsequent patents Nos. 2,639,943, 2,639,942 and 2,681,725 and, therefore, Earnshaw was not entitled to any royalties from American under the license agreement between them.

However, the District Court dismissed the Counterclaim upon the basis that American failed to sustain the burden of proving Earnshaw's patents Nos. 2,639,942, 2,639,943 and 2,681,725 invalid, and failed or refused to find, conclude and adjudge that American's acts were not acts in infringement of Earnshaw's three patents Nos. 2,639,942, 2,639,943 and 2,681,725, so that such issue raised by the Counterclaim (Par. XIII, R. 47) and answer thereto (Par. VI, R. 52) would be *res judicata*. Earnshaw moved (R. 68) to amend the findings upon the basis that Find-

---

<sup>13</sup>Finding of fact No. 12, R. 63.

<sup>14</sup>Finding of fact No. 14, R. 64.



ing No. 14 (R. 64) was tantamount to a finding of non-infringement. The following portion of the discussion at the hearing of the motion to amend Finding No. 14, appearing at R. 237, 238, 239, 240, clearly discloses that the District Judge definitely wished to refrain from deciding the issue of infringement.

“Mr. Wright. Yes, your Honor, but that is in effect in a way, as I still construe it, a statement that there had been no infringement of any of these three patents.

The Court. Oh, no.

Mr. Wright. That is the way it appears to me.

The Court. This is not as to infringement, ‘so as to entitle him to royalty under the same.’ I think that really should go in there.

Mr. Wright. That is all right.

\* \* \* \* \*

Mr. Wright. Now, your Honor, when I approved the findings as to form on reading them, I did not see the import of this paragraph, that it was a statement that would perhaps be decisive on the question of infringement. But after having it called to my attention, also by someone else that Mr. Earnshaw went to, that it might bar an infringement action if anyone wanted to bring an infringement action, I felt it my duty to straighten this out, and I feel it is——

The Court. Let’s hear from Mr. Mellin. I am quite certain that he does not want a judgment beyond what I gave him, and that he does not want to catch me or you in an embarrassing position of deciding something I did not intend to decide, and thereby bind your client. But let us see what he says.

Mr. Wright. May I say this, first. I (they) filed an affidavit by the President of the American Pipe and

Construction Co. stating that it was his information or his position that this settled the infringement. You will find it on page—— (insert ours).

Mr. Mellin. If the court please,——

The Court. Just a minute.

Mr. Mellin. Pardon me.

Mr. Wright. ——page 2, line 26 of that affidavit, so it is the position of the president, anyway, that that is settled by that finding, I suppose.

The Court. Just a minute. Let me look at it.

Mr. Wright. This is from line 26 on, lines 26, 27, 28 and 29 of page 2.

The Court. His statement that the infringement was raised does not dispose of the matter. Let's hear what Mr. Mellin has to say.

\* \* \* \* \*

The Court. Well, I merely decided you did not use in your operations any of the teachings of the patent, and for that reason they were not entitled to royalties.

Mr. Mellin. That is all that finding is, your Honor.

The Court. But I do not want to make this res judicata in any other lawsuit relating to any other matter.

In order to make it certain, I am going to put a comma after that, and put in the words, 'that the defendant has not used any, and that for that reason it is not subject to royalties under said patents.'

I think I will put that in. Of course, that ties it to the other, but because it has opened an argument, I do not desire to go beyond that. I think the conclusions of law should be read together.

Let us agree upon the language. I think you are entitled to a finding that you did not use it. I think, however, to avoid any questions, although I think that paragraph 3 of the conclusions of law takes

care of it, I think we ought to put a semicolon after '2,681,725,' and add this:

'and is, therefore, not liable to plaintiff for royalties for such use.'

\* \* \* \* \*

The Court. No, they are entitled to this, because they are entitled also to a finding that they did not use it. You see, I want to work both ways. I want to protect them as far as their judgment is concerned, and protect you, too, and I have said specifically in the memorandum that the improvements they used are not yours.

You might go into another district and bring another suit. You know the system of going to another state even, or going to the Northern District, where Mr. Mellin resides, and this would not be *res judicata* on infringement, but it would be *res judicata* on use."

Just prior to that hearing, the President of American was informed by an emissary of Earnshaw that the instant case was probably not the end of litigation on the same matter and that the further litigation in the form of infringement litigation would seemingly be instituted, and the District Court was so informed by affidavit at R. 70, particularly the following at R. 71 and R. 72:

"5. On said occasion at my home said Jamieson<sup>15</sup> further stated to me that it was his opinion that if

---

<sup>15</sup>Jamieson stated his capacity as follows (R. 70):

"3. On said occasion said Jamieson stated to me that Spencer H. Earnshaw, the plaintiff in the above entitled action, had recently come to him and had requested that he accept the employment of representing said Earnshaw in an appeal from the judgment entered in the above entitled cause."

Earnshaw had any case at all against American Pipe and Construction Co. arising out of the patents involved in the within action, it was an action for infringement of said patents; that in his opinion the within action should have been brought for infringement rather than for royalties under the license agreement; and that American Pipe and Construction Co. should resurvey its position with respect to infringement of Earnshaw's said patents. \* \* \*

6. Said Jamieson then and there stated to me that Earnshaw was trying to find an attorney to represent him, but that he, Jamieson, would not represent Earnshaw until the judgment herein has become final by lapse of the time to appeal, and that he would then represent Earnshaw only in the event I would state to him that American Pipe and Construction Co. would be interested in disposing of the entire controversy over infringement of Earnshaw's said patents on a settlement basis. Finally, he then and there stated that if he could serve Earnshaw and American Pipe and Construction Co. in arriving at such a settlement, he would be glad to do so."

Despite this indication that further litigation may probably ensue, the District Court still restricted its Findings and Judgment as above indicated so that the issue of infringement of Earnshaw's patents would not be res judicata and a bar to a future infringement suit by Earnshaw against American, resulting in further harassment of and expense to American.

It is the position of American here that it is entitled under the evidence and findings to the relief prayed for in the Counterclaim; to-wit, a judgment declaring:

(a) that the use of rubber brushes in lieu of wire brushes in the "Brend" type of machine does not infringe any of the enumerated Earnshaw patents;

(b) that the claims of Earnshaw's patent No. 2,639,943, purporting to include the prior "Brend" machine fitted with rubber brushes within their scope, are invalid in law.

This appeal is for reformation of the Judgment to the extent indicated.

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#### **ASSIGNMENT OF ERRORS.**

1. The District Court erred in failing to find claims 6, 7, 13 and 14 of Letters Patent No. 2,639,943 invalid in law.

2. The District Court erred in finding and concluding that American failed to sustain the burden of proving claims 6, 7, 13 and 14 of Letters Patent No. 2,639,943 to be invalid.

3. The District Court erred in failing to find, conclude and adjudge that the "Brend" machine, when equipped with rubber brushes in lieu of wire bristle brushes, did not infringe any of Earnshaw's patents Nos. 2,639,942, 2,639,943 and 2,681,725.

4. The District Court erred in failing to find, conclude and adjudge that appellant, American, committed no acts of infringement of any of the Earnshaw patents.



### ARGUMENT.

1. THE ISSUES RAISED BY THE COUNTERCLAIM ARE JUSTICIABLE AND THE CONTROVERSY BETWEEN THE PARTIES DID NOT COME TO AN END ON THE DISMISSAL OF THE COMPLAINT SINCE THE DISPUTE WENT BEYOND THE BARE CASE FOR ROYALTIES UNDER THE LICENSE AGREEMENT.

The Complaint itself establishes that an actual and justiciable controversy existed between the parties as to whether or not the "Brend" machine equipped with rubber brushes in lieu of wire bristle brushes infringes the later Earnshaw patents which are not included in the license. The Complaint at R. 9 alleges:

" \* \* \* and therefore alleges that said defendant has continuously coated and/or lined and applied to the inside or outside of pipe of material manufactured by defendant and its subsidiaries and/or assigns, and is still coating and lining same by using the methods and process covered by plaintiff's patents. \* \* \* "

This is certainly a contention that the American's "Brend" machine equipped with rubber brushes comes within the scope of Earnshaw's later patents, which is merely another way of stating a charge of infringement.

This is certainly sufficient basis for American to seek by way of counterclaim for a declaratory judgment that its acts did not constitute infringement of such patents. The Counterclaim clearly raises the issues of infringement and invalidity by proper pleading. As to infringement, the Counterclaim alleges (R. 46-47):

"XI. That the basis of said demand on the part of counterclaim defendant is that counterclaim defendant allegedly owns three United States patents

identified as Nos. 2,639,942, 2,639,943 and 2,681,725, and charges that said patents were contemplated by said agreement of February 8, 1944 and that counterclaimant, its subsidiaries or assigns, has manufactured, sold or used devices or machines coming within the scope of said patents and is, therefore, obligated under the terms of said agreement to pay to counterclaim defendant royalties thereon in accordance with the agreement of February 8, 1944, and that said agreement endures to the expiration date of the last expiring of said three Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725.

XII. Counterclaimant alleges that said patents were not contemplated by said agreement of February 8, 1944, and that counterclaimant at no time was a licensee under said patents.

XIII. Counterclaimant alleges that counterclaimant, its subsidiaries or assigns, did not at any time manufacture, use or sell any devices or machines coming within the scope of said Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725 and has committed no acts of infringement thereof."

The allegations in paragraphs XII and XIII were denied. (R. 52, Par. VI.)

The District Court adjudged (R. 65) as follows:

"5. That the agreement of February 8, 1944 terminated with the expiration of Letters Patent No. 2,168,329."

and in so doing, clearly ruled that the subsequent Earnshaw patents Nos. 2,639,942, 2,639,943 and 2,681,725 were not contemplated by the license agreement of February 8, 1944 and that American was not a licensee under such

patents, because otherwise the license agreement would not have expired and terminated but would have endured until the last expiring of those three patents. Therefore, the pleading (R. 9-10) :

“ \* \* \* and therefore alleges that said defendant has continuously coated and/or lined and applied to the inside or outside of pipe of material manufactured by defendant and its subsidiaries and/or assigns, and is still coating and lining same by using the methods and process covered by plaintiff's patents. \* \* \* ”

stands as a naked charge that American has infringed such patents.

Clearly, this presents a justiciable controversy and the issue is clearly raised in the amended Counterclaim (R. 44) and the answer thereto (R. 51). The Court, in refusing or failing to grant American the relief it prayed for on such issue, failed to grant full relief to American and the controversy between the parties did not come to an end and a multiplicity of suits was not prevented. The fact that the controversy and the litigation is not at an end is amply clear from the fact that after the Judgment was entered, Earnshaw's emissary (a lawyer) intimated that an infringement action was contemplated by Earnshaw against American on these same patents. See the affidavit of Mr. Edwards. (R. 70.)

A successful defendant on part of a controversy has the right to appeal to obtain a complete adjudication of the entire controversy. The controversy is determined by the pleadings (Daniell's Chancery Practice, pp. 330, 331, 990; *In re McEwen's Laundry, Inc.* (6 Cir. 1937), 90 F.

2d 872, 874) and the judgment must be responsive to the pleadings (*Reynolds v. Stockton* (1891), 140 U.S. 254, 35 L. Ed. 464, 469, 11 S. Ct. 773).

See also the following authorities:

*Altwater, et al. v. Freeman, et al.*, 63 S. Ct. 1115 (1943), 319 U.S. 359;

*Kalo Inoculant Co. v. Funk Bros. Seed Co.*, 161 F. 2d 981 (C.A. 7, 1947);

*Brunswick-Balke-Collender Co. v. American Bowling & Billiard Corporation*, 150 F. 2d 69 (C.A. 2, 1945).

**2. THERE CAN BE NO INFRINGEMENT OF EARNSHAW'S PATENTS UNDER THE FACTS AS FOUND BY THE DISTRICT COURT.**

The Findings of Fact of the District Court are ample basis for a conclusion and judgment of non-infringement and in fact preclude a conclusion of infringement. We quote the following findings and point to the substantial evidence supporting each finding:

“6. That Defendant, American Pipe and Construction Co., continuously employed said ‘Brend’ machine since prior to February 8, 1944, and has not manufactured, sold or used any machine such as illustrated, described and claimed in Plaintiff’s Patent No. 2,168,329.”

This finding is based on the admission by Earnshaw that he never contended that the “Brend” machine, when it employed wire brushes instead of rubber brushes, came within any of his patents (R. 108):

“Q. And you never made any contention that any royalties were due you on the Brend machine using wire brushes, did you?

A. No, I did not.

Q. Now, the first time that you claimed royalties was when they substituted rubber brushes in the same Brend machine for wire brushes, isn't that a fact?

A. When they substituted rubber rollers for the wire brushes.

Q. And that is the time when you said, 'Now, I patented that and that belongs to me,' is that correct, in substance?

A. That is when I said I had the patent on application, and they were using it, and I wanted to be paid my royalties for it.

Q. In other words, your complaint was that they were using rubber rollers in lieu of wire brushes; isn't that correct?

A. That is right.”

The Court also found and we quote (R. 62):

“7. That during the year 1946 Lock Joint Pipe Company, of New Jersey, at their plant at East Orange, New Jersey, caused to be designed and manufactured brushes for the 'Brend' machine having an outer periphery of rubber, which rubber outer periphery was ribbed longitudinally.

8. That during the year 1946 said Lock Joint Pipe Company installed such rubber brushes in a 'Brend' machine in lieu of wire brushes and successfully coated pipe with such 'Brend' machine so fitted with rubber brushes.

9. That Lock Joint Pipe Company, prior to the year 1948, fully informed Defendant, American Pipe and Construction Co., of its said use of rubber brushes in a 'Brend' machine.”



These findings are based on substantial evidence which was uncontradicted, which evidence being the testimony of Hugh Foster Kennison, commencing at page 173, and was fully substantiated by documentary evidence. This knowledge and use by Lock Joint Pipe Company and the knowledge by American was more than one year prior to the filing date of the applications for any of the three Earnshaw patents Nos. 2,639,942, 2,639,943 and 2,681,725. This same evidence also substantially supports Finding No. 14, which reads as follows (R. 64):

“14. That Defendant, American Pipe and Construction Co., has not used in its operations any novel features brought to the art in any of Plaintiff’s three subsequent patents Nos. 2,639,942, 2,639,943 and 2,681,725; and is, therefore, not liable to Plaintiff for royalties for such use.”

From the above, one can arrive at no conclusion other than that American did not commit any acts of infringement of the three Earnshaw patents Nos. 2,639,942, 2,639,943 and 2,681,725, and in that it only employed the “Brend” machine as shown in the Brend patent, it could not have infringed patent No. 2,168,329. In other words, the machine that is charged to infringe the three Earnshaw patents Nos. 2,639,942, 2,639,943 and 2,681,725 was a machine of an early prior patent (Brend No. 2,380,499, issued July 31, 1945, Defendant’s Exhibit “B”, R. 279) modified only by substituting rubber brushes for wire bristle brushes, which had been done by Lock Joint Pipe Company more than one year prior to the filing date of the earliest of the three patents Nos. 2,639,942, 2,639,943 and 2,681,725 (R. 257, 267, 273), which was April 30, 1948.

The law is clear that where the accused device follows the prior art, no infringement can be found. Nowhere is the rule more clearly announced than in a recent opinion in *Casco v. Sinko*, 116 F. 2d 119 (C.A. 7, 1940), certiorari denied 312 U.S. 713, where it is said at page 123:

“Defendant’s device is within the lessons of the prior art and does not infringe.”

Additional cases so holding are:

*Galion v. Beckwith*, 105 F. 2d 941 (C.A. 3, 1939);

*Thompson v. Boisselier*, 114 U.S. 1, 5 S. Ct. 1042;

*T. L. Smith Co. v. Cement Tile Machinery Co.*,  
257 F. 423 (C.A. 8, 1919);

*Dalton Adding Mach. Co. v. Rockford Milling  
Mach. Co.*, 267 F. 422 (C.A. 7, 1920).

Therefore, in view of the Findings of Fact of the Trial Court above set out, all supported by substantial testimony, the Court should have found, concluded and adjudged that the “Brend” machine, even with rubber brushes substituted in lieu of the wire brushes, did not infringe any of the claims of the three Earnshaw patents Nos. 2,639,942, 2,639,943 and 2,681,725, and the Court committed error in failing or refusing to grant the relief prayed for by American in its Counterclaim as to the issue of whether or not American’s acts constituted acts of infringement of Earnshaw’s patents Nos. 2,639,942, 2,639,943 and 2,681,725.

**3. THE FINDINGS OF FACT OF THE DISTRICT COURT CLEARLY DEMONSTRATE INVALIDITY OF CLAIMS 6, 7, 13 AND 14 OF PATENT NO. 2,639,943.**

The District Court was in error in not concluding that claims 6, 7, 13 and 14 of patent No. 2,639,943 were invalid. We set those claims out here in full:

“6. A machine for applying material of the character set forth, including: a pair of rotary drums having resilient surfaces, mounted to a revoluble frame unit, and means comprising a worm and worm wheel driven by a motor to revolve said frame unit, said drum surfaces adapted to yield to the pressure of material particles which are accelerated by the drums; said yielding effect being due to the resilient action of said drum surfaces that stretches and compresses around material particles forming recess-like pockets, and means to drive said drums.

7. A machine for applying particled material of the character set forth, including a drum provided with a resilient surface, a second drum providing an opposing surface to the first drum, means for rotating the second drum, and means for feeding particled material between the surfaces of the two drums, the resilient surface of the first drum maintaining particled material against the surface of the second drum to discharge the particled material at a velocity sufficient to compact the particles of said material against a surface at a distance from the machine.

13. The machine of claim 6 in which the resilient surface of at least one of the rotary drums is ridged to provide a series of closely spaced grooves.

14. The machine of claim 7 in which the resilient surface of at least one of the two drums is ridged to provide a series of closely spaced grooves.”

Clearly, these claims precisely described the "Brend" machine as shown in the prior Brend patent No. 2,380,499 (Defendant's Exhibit "B", R. 279), when the same is fitted with ridged rubber brushes or rollers in lieu of the bristle brushes.

The Findings of Fact of the trial Court above quoted, all supported by substantial evidence, are clearly to the effect—

(1) That Earnshaw was not the first inventor or the originator of the use of rubber covered rollers for wire brushes in the "Brend" machine, but that this was originated and actually used by Lock Joint Pipe Company early in 1946, almost two years prior to the filing of the application for patent No. 2,639,943, which was April 30, 1948. So even if the substitution of rubber brushes for wire brushes can, by any stretch of the imagination, be called patentable invention, this prior knowledge on behalf of Lock Joint Pipe Company and American and the prior public use by Lock Joint Pipe Company more than one year prior to the filing date of the Earnshaw patent No. 2,639,943, render the claims above identified invalid.

Title 35, Section 102 U.S.C.

"Conditions for patentability; novelty and loss of right to patent.

A person shall be entitled to a patent unless—

(a) *the invention was known or used by others in this country*, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or".  
(Emphasis ours.)

*Curtis Companies, Inc. v. Master Metal Strip Service, Inc.*, 125 F. 2d 690 (C.A. 7, 1942).

“A valid patent cannot issue to an applicant for his alleged invention if it was known or used by others before his invention or discovery, \* \* \*.”

The evidence is conclusive (see Kennison's testimony commencing at R. 173, fully documented) that the ridged rubber brushes for the “Brend” machine were actually made and actually commercially used by Lock Joint Pipe Company early in the year 1946, and there is no evidence to the effect that Earnshaw conceived the idea of ridged rubber covered brushes prior to the filing date of his application for patent No. 2,639,943, which was April 30, 1948, almost two years later. Consequently, the claims above set forth of patent No. 2,639,943 are invalid under the law.

(2) That the Court in its Finding of Fact No. 12 (R. 63) found that the substitution of rubber brushes for bristle brushes in the “Brend” machine did not originate with Earnshaw but originated with Lock Joint Pipe Company. This finding, of course, is supported by the evidence above set out and, consequently, these claims directed to that supposed invention are invalid on the grounds that Earnshaw was not the first inventor of the subject matter of those claims. See 35 U.S.C. 102, from which we quote subdivision (g):

“(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. \* \* \* ”

There is no evidence that Lock Joint Pipe Company suppressed the use of rubber brushes in lieu of wire



brushes in the "Brend" machine, but to the contrary informed American about it and American proceeded to publicly use it.

(3) That the short step of substituting rubber brushes for wire bristle brushes in the old "Brend" machine did not arise to the dignity of patentable invention. The evidence is undisputed that the only advantage, if there was one, in the use of rubber brushes over the use of wire brushes was that the rubber material had a greater abrasive resistant quality than the wire bristles, and hence may wear longer. This does not arise to the dignity of patentable invention where there is no change in the mode of operation of the machine and no change in the result produced and a complete absence of any new and unexpected result.

The testimony on this point by Mr. Butler at R. 164 is uncontradicted and is the only evidence on the point. It has long been held that the mere substitution of one material for another without any new or unexpected results does not arise to the dignity of patentable invention.

This Court in regard to a similar situation held that such a minor advance did not constitute invention. (*Oliver-Sherwood Co., et al. v. Patterson-Ballagh Corporation, et al.*, 95 F. 2d 70, at 80.) That case also presented the question of the use of the well-known characteristics of rubber as does the case at bar. This Court stated the following:

"The use of the elasticity of rubber to grip the pipe and to pass it over the coupling does not arise to the dignity of invention. This view we think is supported by decision of the Supreme Court in the

rubber pencil eraser case. It was there held that the use of the known characteristics of elastic rubber to pass the eraser over and to grip the end of the lead pencil and thus to secure the rubber eraser in place did not involve inventive genius. *Rubber Tip Pencil Co. v. Howard*, 20 Wall. 498, 87 U.S. 498, 22 L. Ed. 410."

Also on the question of whether or not such a trivial advance amounts to invention, this Court in the case of *Keszthelyi v. Doheny Stone Drill Co., et al.*, 59 F. 2d 3, at 8, discussed with approval its decision in the case of *Klein v. City of Seattle*, 77 F. 200, 204, and quoted the following from the latter case:

"A mere difference or change in the mechanical construction in the size or form of the thing used, in order to obviate known defects existing in the previous devices, although such changes are highly advantageous, and far better and more efficacious and convenient, does not make the improved device patentable. In order to be patentable, it must embody some new idea or principle not before known. It must, as before stated, be a discovery, as distinguished from mere mechanical skill or knowledge. *Atlantic Works v. Brady*, 107 U.S. 192, 200, 2 S. Ct. 225 (27 L. Ed. 438); *Hollister v. Benedict*, 113 U.S. 59, 5 S. Ct. 717 (28 L. Ed. 901); *Thompson v. Boisselier*, 114 U.S. 2, 11, 5 S. Ct. 1042 (29 L. Ed. 76); *Busell Trimmer Co. v. Stevens*, 137 U.S. 423, 433, 11 S. Ct. 150 (34 L. Ed. 719); *Andrews v. Thum*, 15 C.C.A. 67, 67 F. 911."

The prior art is replete with evidence of the use of rubber covered counter-rotating elements where rubber is employed because of its known characteristic of being

highly resistant to abrasion. See the prior art patents on devices somewhat analogous to the "Brend" machine in the record commencing at page 363, and note particularly the disclosure of the Barker patent at R. 373 where two counter-rotating rollers are used employing rubber outer peripheries because of its abrasive resistant qualities, and also the Colburn patent (R. 385) employing a ribbed rotating element made of rubber because of the abrasive resistant characteristic of that material.

In line with this Court's recent decisions on the question of invention, this slight step forward in the art, even if it had been originated by Earnshaw, did not arise to the dignity of patentable invention. The recent cases we refer to are as follows:

*Welch v. Grindle*, C.A. 9 No. 15,540 (unreported);

*Container Corporation of America v. M.C.S. Corporation*, C.A. 9 No. 15,433 (unreported);

*Harry X. Bergman, et al. v. Aluminum Lock Shingle Corporation of America*, C.A. 9 No. 15,589 (unreported);

*Bernard H. Stauffer v. Slenderella Systems of California, Inc.*, C.A. 9 No. 15,418 (unreported).

We, therefore, urge that the District Court erred in refusing to declare claims 6, 7, 13 and 14 of Earnshaw's patent No. 2,639,943 invalid and concluding that American did not sustain the burden of proving invalidity.

#### 4. COURTS OF APPEAL ALWAYS HAVE THE POWER TO CORRECT OR REFORM A JUDGMENT.

In this appeal we are asking this Court for a reformation of the Judgment in the Court below to include a declaration that American has committed no acts of infringement of the three Earnshaw patents Nos. 2,639,942, 2,639,943 and 2,681,725, and that the "Brend" machine equipped with rubber brushes in lieu of wire bristle brushes does not come within the scope of any of the claims of those three patents.

We also are asking the Court to reform the Judgment by including a declaration that claims 6, 7, 13 and 14 of patent No. 2,639,943 are invalid in law. This Court has the power to order such reformation under the doctrines announced in the following cases:

*Altwater, et al. v. Freeman, et al.* (1943), 63 S. Ct. 1115, 319 U.S. 359, 87 L. Ed. 1452;

*Mercoild Corporation v. Mid-Continent Inv. Co.* (1943), 64 S. Ct. 268, 320 U.S. 661, 88 L. Ed. 376;

*Electrical Fittings Corporation, et al. v. Thomas & Betts Co., et al.* (1939), 59 S. Ct. 860, 307 U.S. 241, 83 L. Ed. 1268;

*Montgomery Ward & Co. v. Duncan* (1940), 61 S. Ct. 189, 311 U.S. 243, 85 L. Ed. 147.

The questions of infringement or non-infringement and validity or invalidity of these patents are not moot. The actual controversy still exists between the parties as to those questions and the possibility, and in fact probability, of further litigation on the same set of facts can be avoided by such reformation. Also, the Court should consider the public interest in not having an invalid

patent outstanding as a means to extort tribute from industry. The question of the interest of the public on this point is discussed in the following cases:

*United Carbon Co. v. Binney & Smith Co.* (1942),  
63 S. Ct. 165, 317 U.S. 228;

*Hill, et al. v. Wooster* (1890), 10 S. Ct. 228, 132  
U.S. 693, 698;

*Densmore v. Scofield* (1880), 102 U.S. 375, 378;

*Exhibit Supply Co. v. Ace Patents Corporation*  
(1942), 62 S. Ct. 513, 315 U.S. 126, 127;

*Trott, et al. v. Cullen, et al.* (C.A. 10, 1936), 86 F.  
2d 141, 146.

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### CONCLUSION.

We urge this Court that we have clearly shown the error of the District Court in refusing to find, conclude or adjudge that American committed no acts of infringement of the Earnshaw patents Nos. 2,639,942, 2,639,943 and 2,681,725.

We also urge this Court that the District Court committed error in concluding that American failed to sustain the burden of proving invalidity of claims 6, 7, 13 and 14 of patent No. 2,639,943, and that the District Court erred in not adjudging such claims of said patent to be invalid.

We respectfully pray that the Court reform the Judgment to include a declaration that American committed no acts of infringement of Earnshaw's patents Nos. 2,639,942, 2,639,943 and 2,681,725; that the "Brend" machine equipped with rubber brushes in lieu of wire brushes did not come within the scope of any of the



claims of those three patents; and that claims 6, 7, 13 and 14 of patent No. 2,639,943 are invalid.

Respectfully submitted,

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*Attorneys for Appellant.*

**(Appendix Follows.)**

## **Appendix.**



## Appendix

---

### Appellant's Exhibits:

<u>Exhibit Number</u>	<u>Identified</u>	<u>Offered</u>	<u>Received</u>	<u>Rejected</u>
A	104	200	200	
B	107	107	107	
C	119	119	120	
D	120	120	120	
E	121	121	121	
F	121	121	121	
G	121	121	121	
H	132	132	132	
I	140	140	140	
J	141	141	141	
K	168	169	169	
L	169	169	169	
M	171	172	172	
N	173	173	173	
O	177	178	178	
P	177	178	178	
Q	177	178	178	
R	179	179	180	
S	181	181	181	
T	182	182	182	
U	182	182	182	
V	183	183	183	
W	184	185	185	
X	184	185	185	
Y	185	186	186	
Z	187	187	187	
AA	187	187	187	
AB	188	189	189	
AC	189	189	189	
AD	189	189	189	

**Appellant's Exhibits:**

<b>Exhibit Number</b>	<b>Identified</b>	<b>Offered</b>	<b>Received</b>	<b>Rejected</b>
AE	194	194	194	
AF	197-198	198	198	
AG	203	203	203	
AH	210	211	211	
AI	211	211	211	
AJ	211	211	211	
AK	211-213	213	213	



Appellee's Exhibits:

Exhibit Number	Identified	Offered	Received	Rejected
1	77	77	77	
2	78	78	78	
3	78	78	78	
4	78	78	78	
5	79	80	80	
6	80	80	80	
7	80	81	81	
8	83	84	84	
9	83	85	85	
10	87	88	88	
11	87	195	195	
12	87	90	90	
13	90	91	91	
14	126	126	126	
15	132	133	133	
16	133	134	134	



No. 15,630

IN THE

# United States Court of Appeals

FOR THE NINTH CIRCUIT

---

AMERICAN PIPE AND CONSTRUCTION Co.,

*Appellant,*

*vs.*

SPENCER A. EARNSHAW,

*Appellee.*

---

BRIEF ON BEHALF OF APPELLEE,  
SPENCER A. EARNSHAW.

---

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**FILED**

**MAR 10 1958**

**PAUL P. O'BRIEN, CLERK**



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No. 15,630

IN THE

# United States Court of Appeals

FOR THE NINTH CIRCUIT

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AMERICAN PIPE AND CONSTRUCTION Co.,

*Appellant,*

*vs.*

SPENCER A. EARNSHAW,

*Appellee.*

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## BRIEF ON BEHALF OF APPELLEE, SPENCER A. EARNSHAW.

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### Statement of Pleadings and Jurisdiction.

The Appellee, Earnshaw, adopts as his statement of the pleadings and facts disclosing the basis upon which it is contended that the District Court had jurisdiction and that the Appellate Court has jurisdiction to review the judgment, decree or order in question, the matter appearing in the Appellant's brief, pages 1, 2 and 3, under the title "Statement of the Pleadings and Jurisdiction," and Appellee also adopts the statement on page 3 of Appellant's brief under the title "The Parties."

Under the title "Concise Statement of the Case," the Appellee does not adopt the "Concise Statement of the Case" as set forth in the Appellant's brief *in toto*, particularly as to numerous conclusions set forth as to the effect of evidence and therefore Appellee gives the following background to the case.

This case originally arose as stated by the Appellant, in the Superior Court in and for the County of Los Angeles, State of California, by way of Complaint [R. 6] for certain royalties alleged by Appellee to be due from the Appellant under a patent License Agreement, Exhibit A to the Complaint [R. 11]. Subsequently, the case was removed to the Federal Court for the reasons which have been set forth in the Statement of the Pleadings and Jurisdiction, the Appellant having pleaded the existence of a controversy involving patents. The particular contract [Ex. A; R. 11], provides in Paragraph (11), the following:

“If either American or Earnshaw invents any improvements to the processes and methods of Patent No. 2168329 which, in the judgment of American are applicable to the manufacture, or lining, or coating of pipe, the said improvements shall inure to the benefit of both parties on the terms herein set forth and American will pay the costs of patenting the same.”

and Paragraph 12 of said License Agreement reads, as follows:

“(12) It is understood by both parties hereto that American is now using a brush coating machine for the coating of pipe and a centrifugal process for lining pipe, and it is further understood that American is at liberty to continue to use the said processes and/or the processes and methods of Patent No. 2168329 at its option. Improvements or patents applicable to the said brush coating machine and/or centrifugal lining process are expressly excluded from the provisions of Paragraph 11 hereof. The improvements and additional patents referred to in Paragraph 11 shall include only such improvements and patents as refer to and are applicable to Patent No. 2168329, a belt lining machine.” [R. 14-15.]

The Appellee, Earnshaw, has testified [R. 93, 94, 96] that he gave due notice of patents thereafter issued to him, to-wit, Plaintiff's Exhibit 5, Patent No. 2,639,943 [Exhibit Book, p. 257]; Exhibit 6, Patent No. 2,639,942 [Exhibit Book, p. 267], and Exhibit 7, Patent No. 2,681,725 [Exhibit Book, p. 273] by reason of Paragraph (11) of the contract, Exhibit A [R. 14]. There is evidence to the effect that the Appellant was using at its plant what is known as a Brend machine under license from Lock Joint Pipe Company [R. 102, 107] of a type substantially as disclosed in the Brend Patent No. 2,380,499, Defendant's Exhibit B [Exhibit Book, p. 279]. The Brend patent aforesaid discloses a wire brush construction for applying a plastic coating and consists of two drums both provided with wire bristles which counter-rotated for directing a stream of material onto a pipe which is to be coated. Appellee learned that the Appellant was utilizing what is termed the rubber rollers in place of wire brushes on the Brend machine [R. 93] which came within the teaching of Appellee's Patent No. 2,639,943 [Book of Exhibits, No. 5, p. 257] and hence the Appellee by his Complaint, filed after the expiration of Appellee's Patent No. 2,168,329 [Pltf. Ex. 2; Book of Exhibits, p. 245], demanded royalties from the Appellant as see Complaint, Paragraph VII [R. 8 and 9]. The Court below, however, in its decision [R. 57 at R. 59] stated, in part:

“\* \* \* the uncontradicted fact remains that the license agreement between the parties specifically excluded improvements on the device which they were then using and which conformed to the teachings of the Brend patent.”

and see Finding of Fact 13 [R. 64], to-wit:

“That the substitution of rubber brushes for bristle brushes in the ‘Brend’ machine, if it constituted an improvement, was an improvement to the ‘Brend’ machine and not to the machine of Plaintiff’s patent No. 2,168,329.”

and likewise see Conclusion of Law 3 [R. 64], which reads as follows:

“That the ‘improvements’ referred to in paragraph (11) of the agreement of February 8, 1944 are limited to ‘improvements’ on the machine disclosed in Plaintiff’s Letters Patent No. 2,168,329, and that the changes, alterations, additions or improvements made to the ‘Brend’ machine by Defendant, American Pipe and Construction Co., are not such ‘improvements’ as are contemplated by paragraph (11) of the agreement of February 8, 1944.”

From this Finding of Fact and Conclusion of Law, the Appellee took no appeal to this Court. However, a controversy arose as to Finding of Fact 14, and its possible interpretation, and after a hearing in the Court below [R. 235], the Court on its own motion [R. 241] amended this Finding of Fact to read as follows [R. 64 and R. 241]:

“14.

“That Defendant, American Pipe and Construction Co., has not used in its operations any novel features brought to the art in any of Plaintiff’s three subsequent patents Nos. 2,639,942, 2,639,943 and 2,681,725; and is, therefore, not liable to Plaintiff for royalties for such use.”

The Court below, in its opinion [R. 60] stated:

“By the same token, the use of rubber brushes in this type of machine does not seem to be disclosed



in the prior art. And the Earnshaw patents 2639942, 2639943 and 2681725 have additional elements of originality. So we conclude that on the subject of invalidity, the defendant has not met the burden of proof and that the Earnshaw patents referred to are invention over the prior art.”

and Conclusion of Law 6 [R. 65] is as follows:

“That Defendant, American Pipe and Construction Co., failed to sustain the burden of proving Letters Patent Nos. 2,639,942, 2,639,943 and 2,681,725 to be invalid.”

It is because of Finding of Fact 14 and Conclusion of Law 6 that this appeal was taken by the Appellant on the ground that further litigation may probably ensue (Appellant’s Br. p. 11) and the Assignment of Errors in Appellant’s Brief, page 12, now designates claims 6, 7, 13 and 14 of Earnshaw Letters Patent No. 2,639,943 as the claims that the District Court should have found invalid. Invalidity of the other Earnshaw patents is not sought, but a finding by this Court is asked to the effect that the said patents, the three now in full force and effect, are not infringed by Appellant when used on the Brend machine equipped with rubber rollers in lieu of wire bristle brushes.

It is well to point out certain parts of the testimony given by Appellant’s witnesses in the Court below as well as testimony given by Mr. Earnshaw, the Appellee, with respect to the so-called wire brushes and rubber rollers. In Defendant’s Exhibit N [Exhibit Book, p. 297] admitted in evidence [R. 172] Mr. Earnshaw in his deposition states the characteristics of the Device of Patent No. 2,168,329 [Exhibit Book, p. 247, Ex. 2] to the ef-

fect that material was deposited on the belt and traveled along the belt and obtained velocity whereby [p. 302] the material is thrown by centrifugal action by the belt coming around the circle, and, further [p. 303], that:

“Then I took a piece of old, red innertube out of an automobile, and I sewed that together.

Q. In other words, you made rubber belts for those machines? A. I wouldn't say that the string and the clothesline was rubber.

Q. How about the red innertube? A. The red innertube was rubber, yes.

\* \* \* \* \*

Q. Then it was within your range of knowledge at the time that you conceived the machine shown in that early patent of 1939 that you could use rubber belts, if you wished, in it? A. I was trying to find the very best kind of a belt there was. \* \* \*

\* \* \* \* \*

Q. [R. 304, Ex. M] And you knew at that time that rubberized or rubber-coated belts were common; isn't that a fact? A. Yes, there was rubber belts on the market.

Q. Now, you talked about this model that you have. Where is that model now? A. I have it. It's at my place.

Q. Is it in condition to demonstrate what you show in your early patent? A. Like I say, it's just a belt. I don't know whether the belt has deteriorated with age. I had a one-horsepower motor I was working with there on it. I don't know whether the deterioration of the belt would be so that we could drive it or not. We could see it, though, if you want to look at it.

Q. What material is the belt on that machine made of? A. I believe it's a four-ply rubber im-

pregnated canvas with about a sixteenth of an inch of rubber possibly on the surface of it.

Q. When did you make that model, approximately? A. I think it was in about '42."

This testimony is important for the reason that it shows that Earnshaw [as to Pltf. Ex. 2] actually contemplated the use of a rubber coated belt or belts for the handling of material which was to be thrown by centrifugal force from the belt or belts when it passed around the ejection end of a roller. In other words, the material would be driven tangentially from the belt when the belt was moved at a certain velocity.

Testimony concerning the use by Appellant of rubber rollers or latex impregnated bristle brushes was given by Appellant's witnesses Adolph G. Butler and Fred F. Jenkins, commencing at R. 134. Mr. Jenkins [R. 135] outlined the number of machines utilizing either rubber brushes or wire brushes at the several plants, amounting to six (6) machines with rubber rollers and three (3) with wire [R. 135], the Los Angeles plant having one (1) wire brush machine and two (2) rubber brush machines. He stated that eighty per cent (80%) of the pipe coating is now done with rubber rollers [R. 136] and that the substitution of rubber for wire was done late '47 or early '48 [R. 139]. The change was made on account of the war, the testimony being:

"A. On account of the war. During the war we were not able to purchase the type of wire brushes that we wished to buy. There is difference in the wire brushes. You have to have the right gauge of wire in the brushes in order to make them work satisfactorily, and it was hard to do. So we started in to try to protect the wire by using a rubber substance." [R. 139, 140.]

Mr. Butler [R. 142] testified, in part, as follows:

That the first wire brush for the coating of pipe was built in February of 1943 [R. 143] and that toward the end of 1947 was when American Pipe and Construction Co., at South Gate, commenced using rubber rollers [R. 144]. This was a coating process of the wires [R. 144], as follows:

“A. We were working with coating them at the time.

Q. What were you doing in connection with coating the wire brushes? A. How we were doing it?

Q. Yes. A. We were dipping them in a rubber solution, attempting to bond rubber to the individual wires.

Q. Why did you do that? A. We felt it might improve the life of the wire brush by doing that.

\* \* \* \* \*

Q. In what respect? Longer wear? A. We are always looking for longer wear.

Q. That was the sole purpose, wasn't it? A. Anything that would prolong the life is desirable, yes.

\* \* \* \* \*

Q. Now, you found that the rubber would outlast the wire brushes? A. At that time it didn't indicate the fact that we were improving them very much, no.

Q. Well, you continued to do that, though, to dip them or coat them, didn't you? A. We continued to try various methods of coating them.

Q. Yes. None of them worked very well, did they? A. None too well.

Q. The coating split, did it not? A. It had various factors that were—nothing resulted in a

very great improvement over what we already had.”  
[R. 145.]

\* \* \* \* \*

“Q. Then how long did that last? A. That lasted up until late in 1948, probably.

Q. Late 1948. Then you switched over to rubber then, did you, at that time? A. Gradually, back and forth.

Q. Well, when did you first start to use all rubber rollers or brushes? A. It was a matter of probably two or three years before we went exclusively, or went mostly, the greater percentage of it, to rubber.

Q. You mean two or three years after 1949, or when? A. After '48 or '47.

Q. 1948? A. Somewhere in there.

Q. When would that be,—1950 or '51? A. Probably it would be. When we decided it was probably desirable, and we thought we were doing a better job, or thought we have improved it some at that time.

Q. In other words, the rubber rollers you thought did a better job; is that right? A. We thought so, yes.” [R. 146.]

As to the advantages of rubber rollers over the wire brushes, Mr. Butler testified [R. 148], as follows:

“Q. Well, you re-groove the rubber rollers, don't you? A. Yes, we do.

Q. And you do that twice, don't you? A. We can do—occasionally we can do it twice. Not often.

Q. And you coat your big pipe, your big jobs with the rubber rollers, don't you? A. We do now, yes, sir.”



And, again [R. 149]:

“Q. Well, at first, when you started in on the the rubber, you didn’t have discs,—rubber rollers on discs, did you? A. No, we used the wire brush as a base.

Q. As a base. Now, in this local plant here, is it not a fact that the coating you are doing now is about 80 per cent with rubber rollers? A. That would be a good guess.”

The witness testified on R. 154 in answer to question:

“Q. Now, with the wire brushes, if a rock or a hard object goes through, it is apt to come out with great speed and is dangerous to the operators, is that not right? A. You say with the wire brushes?

Q. Yes. A. Yes, it is.

Q. That is not true with the rubber? A. No. It don’t come out.

Q. So that is safer? A. It is more costly, though. That’s right.”

The witness testified [R. 158, *et seq.*] that the life of rubber rollers in regular use last for 400 cubic yards of material, or 1,600,000 pounds [R. 159] and at R. 160, that the 400 cubic yards of material is the total life of the brush, and that they may be re-cut twice as a rule, and three times occasionally [R. 160], while the life of the wire brushes lasted 300 cubic yards [R. 160]. Mr. Butler also admitted that he had seen the two rubber tires mounted together in a garage at Mr. Earnshaw’s residence in 1948 [R. 166]. Further testimony was given by Mr. Butler [R. 167] concerning the dipping of

the wire brushes into a latex, and in answer to a question, stated:

“A. Well, I couldn’t bond them to the wire. I mean, I didn’t know the technique of bonding them to the wire.

\* \* \* \* \*

A. Kirkhill finally helped us out on it, yes, sir.

\* \* \* \* \*

A. That was in 1948, early.” [R. 167.]

Appellee has quoted from the testimony of Mr. Butler rather extensively for the reason that the Appellant has asserted in its Brief, page 23, that the use of the rubber rollers for wire bristled brushes assumedly as defined in Earnshaw Patent No. 2,639,943, and particularly claims 6, 7, 13 and 14, did not rise to the dignity of patentable invention. As to this, Appellee will respond in the Argument, and refer back to the testimony of Mr. Butler and Mr. Jenkins already given.

It is noteworthy that the Appellant introduced into evidence a book of exhibits, Exhibit AK [R. 213] of prior art alleged to anticipate the Earnshaw patents, Plaintiff’s Exhibits 5, 6 and 7. The Record shows that Appellant introduced the patents into evidence without explanation thereof, and no explanation of their applicability appears in the Appellant’s Opening Brief. The Appellee, however, produced Professor Robert L. Daugherty [R. 214], head of the Department of Mechanical Engineering, California Institute of Technology, to discuss the meaning of words and what to him the prior art patents introduced by Appellant disclosed. Professor

Daugherty first stated what the Appellee's patents, Exhibits 2, 5, 6 and 7, disclosed to him [R. 215, 216] followed by a discussion of the Brend patent, Defendant's Exhibit B, and gave a definition of "brush" [R. 217], to-wit:

"The Witness: That's right. It would mean a lot of separate bristles of some material."

and he identified Defendant's Exhibit I as a brush [R. 217], and Appellant's Exhibit J was not a "brush"—

"A. Because it doesn't have these separate flexible elements that are supported at one end, and with some supporting material." [R. 218.]

Thereafter, Professor Daugherty discussed each one of the patents, Exhibit AK, with a summary [R. 230] wherein he testified with reference to the patent devices:

"Q. (By Mr. Brown): —in your opinion, could they be utilized, the devices shown, in either the Brend device as disclosed in patent 2,380,499 in place of the bristles, or in the Earnshaw patent '943, Exhibit 5? A. You mean all these rotary pump devices?

Q. Yes. A. No, they could not be used in either one of these ways.

Q. And the reason. A. The reason is that they are not adapted to handle abrasive material, fundamentally. The next is they do not discharge the material with a high enough velocity. The purpose is entirely different. It is to deliver material from a low pressure zone to a high pressure zone.

Q. And you would say that the function is different, then? A. The function is completely different.

Q. And the results obtained different? A. Yes."

The witness gave several definitions of the words “resilient,” “elastic,” and in referring to the brush exhibit, testified [R. 229]:

“A. No, I don’t think it is a surface you could call resilient. The bristles of the brush can bend, but I would not think of that from an engineering standpoint as being a resilient surface.”

and the Court [R. 233], during cross-examination of the witness, asked:

“The Court: Resiliency, doesn’t that apply to going up and down rather than going side ways, the way a brush would?”

The Witness: That is the way I would take it.”

Professor Daugherty’s testimony with reference to the prior art patents was uncontradicted.

### ARGUMENT.

1. Claims 6, 7, 13 and 14 of Letters Patent No. 2,639,943 and Letters Patents Nos. 2,639,942 and 2,681,725 Are Valid at Law.

The Appellee, in the Court below, produced the uncontradicted testimony of Professor Robert L. Daugherty to the effect that the prior art patents did not, in his opinion, anticipate the several Earnshaw patents. It is evident, therefore, that the Appellee is relying chiefly upon the deposition of Hugh Foster Kennison to establish an alleged prior public use of rubber rollers in a Brend machine of the type disclosed in the Brend brush patent, [Ex. D, Book of Exhibits, p. 279].

Appellant further asserts that claims 6, 7, 13 and 14 of Letters Patent No. 2,639,943 are invalid on the ground of lack of patentable invention.

In considering the testimony of Mr. Kennison, it is noted that Appellant relies on Title 35, United States Code, Section 102(a) and (g). Of course (g) also contains the words "In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to the conception of the other." This, of course, gives the patentee of the patent under attack the right to carry back his date of invention, if he is able to do so.

Mr. Kennison testified [R. 178, 179] that it was the early part of 1946 that brushes of rubber were tried and that rubber covered drums were actually built, as follows:

"A. Yes, they were actually built, and they were returned to us, and we ran—or produced some pipe with those brushes on June 13 and 14, of 1946." [R. 183.]

These rubber covered drums were run on a Brend type machine, as exhibited in the Brend patent, Exhibit 4, being substituted for the two wire brushes [R. 184].

"Q. And what was the reason why you were testing rubber-coated drums in lieu of wire brushes, if there is a reason. A. We were always looking for more economical means of producing pipes, and it was felt that rubber might have some advantage in this particular application." [R. 185.]

\* \* \* \* \*

"Q. After you tested the rubber-coated brushes, as shown in Exhibit 5, '—which is R here—' as you have testified, what, if anything, did you do further in connection with rubber-coated brushes? A. Well, the tests indicated that the brushes would be—or



might be of advantage if we had greater allowance for depth of wear. These brushes we have just talked about only allowed for about  $\frac{1}{2}$ " of radial wear. So later that year, we designed a new housing in which we could put in rubber vanes. This housing is illustrated on drawing B-1-567, dated 8-15-46." [R. 186.]

\* \* \* \* \*

"Q. And I hand you what appears to be a photograph of purchase order 3236. What is that? A. This is the purchase order for that flat strip of rubber  $\frac{1}{2}$  by 5, which we cut to special length and made the vanes similar to that illustrated on B-1-567." [R. 187.]

\* \* \* \* \*

"A. This rubber was used, but it had a very poor fit in forming it into a U-shape.

Q. That is, into the socket which held it? A. Into the socket of the hub assembly. Pipe were made with this mechanism, but we found that due to centrifugal force, one leg of the extended U would extend and the other would come in, due to difference in weight of each of the arms of the U. As a result, this was redesigned. Drawing B-4-129, dated December 6, 1946, illustrates an extruded rubber shape for rubber vane coating brush. This was designed so that it could not be dislodged due to centrifugal force. And it was a pre-formed shape as opposed to our earlier attempt at rubber vanes." [R. 187-188.]

"Q. Was that actually built? A. This was actually built and used.

Q. And used on a Brend type of machine, of the type we have been discussing? A. Yes.

Q. And did it operate satisfactorily, except for

wear, if it did not operate satisfactorily for that purpose? A. It operated well enough to make several pipe. We did realize at that time, though, that again centrifugal force was stretching the rubber and we were getting some interference. At that time we discussed putting reinforced wire mesh in this extruded shape. But this was never actually tried." [R. 188.]

The dates given for the brushes of December of 1946 and tests conducted prior to March of 1947 [R. 188].

\* \* \* \* \*

"Q. What was your ultimate conclusion, if you arrived at any, with respect to the use of rubber-coated drums of the types you have mentioned as compared with the wire brushes that you were using?

A. We felt that the cost of brush per cubic yard of mortar placed was more or less the same. At the same time, we were negotiating with several of the larger wire brush manufacturers for improved quality and price reduction, due to our quantity use of the brushes. This negotiation with the wire brush people was successful, *so we concluded our experiments* on the presumption we could get cheaper placement of mortar by using steel brushes, as well as that we felt the brush people could produce in the future cheaper and better brushes for this particular use." [R. 189, 190.] (Italics added.)

Again, on R. 191, the witness testified:

"Q. Now, ever since that time, that is, since 1946 or 1947 you have continuously used machines having brushes for this same function and purpose? A. Yes.

Q. And, as I understand it, you have about 15 of them with counter-rotating brushes in operation at this time. A. More or less.

Q. And they all use wire brushes, do they, or brushes of some other character? A. *They all use wire brushes.* In the past few years, we have had a few with steel vanes, using a similar principle to that shown on drawing—

Q. B-1-567? A. Yes, B-1-567.—excepting they are fixed steel fins, counter-rotating.” (*Italics added.*)

It is noteworthy to observe in the Kennison testimony that the first so-called experiment consisted of two drums which were covered with rubber by the Manhattan Rubber Company, and thereafter were grooved by a tire grooving machine at the plant of Lock Joint Pipe Company. This provided but two rubber covered drums to experiment with. Kennison immediately transferred the experiment from drums of this character to the use of rubber strips bent in U-form which he found did not function properly due to centrifugal force. It is obvious that the U-shaped form was one form of brush and thereafter Kennison concluded the experiments, as set forth in the Kennison testimony, R. 189, cited. It is quite evident that there was no public use of the devices and that Kennison's work was experimental, and an abandoned experiment. Nowhere in the testimony is there any statement by Kennison or by any one else connected with Lock Joint that the so-called experiments *were not* conducted in secret, that what was done was not suppressed, nor concealed. The testimony is silent. There is no indication that Manhattan Rubber Company knew anything about the use to which the rubber covered drums were to be put, other than that it was to cover two drums with rubber, and the testimony shows that Lock Joint, under Kennison's supervision, grooved the rubber, so Manhattan had nothing to do with this particular operation. It would seem that an infringer

should prove all the elements of the defense of prior public use, not only the actual use of the invention, but its public nature. (*Aerovox Corporation v. Polymet Mfg. Corporation*, 67 F. 2d 860, 861 (C. C. A., 2); *Whiteman v. Mathews*, 216 F. 2d 712 (C. C. A., 9).) It has been held by innumerable decisions that a subsequent invention is not anticipated where the earlier inventor conceals or suppresses the fact of his knowledge or use until the subsequent invention is made, as see:

*Steinfur Patents Corp. v. Meyerson*, 56 F. 2d 372.

An invention, the discovery and use of which is not made public but is concealed and kept secret, will not anticipate a patent for the same device thereafter discovered. (*Gayler v. Wilder*, 51 U. S. 477; *Kendall v. Winsor*, 62 U. S. 322, 328.) It is not felt that the Kennison testimony as to *experiments* made by him meets the requirements imposed on the Appellant of want of novelty of the claims of Patent No. 2,639,943. (*Rown v. Brake Testing Equipment Corp.*, 38 F. 2d 220, 223 (C. C. A., 9); *Radio Corp. v. Radio Engineering Lab.*, 293 U. S. 1, 7; *Contract Co. v. Hassam Paving Co.*, 227 Fed. 436, 440 (C. C. A., 9); *Selectasine Patents Co. v. Prest-O-Graph Co.*, 276 Fed. 260 (C. C. A., 9) and 282 Fed. 223 (C. C. A., 9); *Schumacher, et al. v. Buttonlath Mfg. Co.*, 292 Fed. 522, 531 (C. C. A., 9); *Carson Inv. Co. v. Anaconda Copper Mining Co.*, 26 F. 2d 651, 661 (C. C. A., 9).)

We should not forget that Kennison was the only witness of the so-called experiments, and it has been held

that the unsupported oral testimony of one witness is seldom strong enough to negative novelty of a patent beyond a reasonable doubt, as set forth by this Court in

*Rown v. Brake Testing Equipment Corp.*, 38 F. 2d 220, 223 (C. C. A. 9),

“clear and satisfactory proofs, with reasonable doubts resolved against it.”

Also:

*Paraffine Companies v. McEverlast*, 84 F. 2d 335, 339 (C. C. A. 9).

The case of *Rem-Cru-Titanium v. Watson*, 152 Fed. Supp. 282 at 285, is of interest on the question of use of an invention under Title 35, United States Code, Section 102. In this case, the Court held, as follows:

“The word ‘known’ used in the statute means ‘publicly known.’ ”

citing the case of *Alexander Milburn Co. v. Davis-Bournonville Co.*, 270 U. S. 390, 46 S. Ct. 324, 70 L. Ed. 651, as well as others.

This is important because there is no testimony by Kennison, or anyone else, as to public knowledge of any one of the experiments by Kennison.

On the question of “experimental use,” the case of *Merrill v. Builders*, 197 F. 2d 16 (C. C. A. 10), is to the effect that an alleged prior use of an invention which was for the primary purpose of testing the device and was collateral to the development of the invention in its complete and perfected form, is not public use within the meaning of the patent statute.



The case of *Bourne v. Jones*, 114 Fed. Supp. 413, aff'd 207 F. 2d 173 (C. C. A. 5), is to the effect that the rule that an experimental use of an invention by or under the control of an inventor for the purpose of testing or improving his invention is not a public use within the meaning of the patent statutes does not extend to the experimental efforts of others not within his control.

The Appellant, however, in its brief, insists that it was incumbent upon the Appellee to show that he had the invention prior to the time of the so-called Kennison experiments to overcome the charge of public use. Such a rule is generally followed in Interference Practice between two rival inventors who have filed applications for patent in the Patent Office, and is commonly known as "carrying back the date of invention." Appellant states, in its brief, page 22:

"\* \* \* and there is no evidence to the effect that Earnshaw conceived the idea of ridged rubber covered brushes prior to the filing date of his application for patent No. 2,639,943, \* \* \*"

Appellee calls attention to the testimony of the Appellee as given in the Appellee's Deposition, Defendant's Exhibit M, Exhibit Book, page 297, identified, offered and received in evidence [R. 172] and which the Appellee refers to pursuant to Rule 26(f), Rules of Federal Procedure. This testimony is referred to and quoted in this brief on pages 6 and 7, wherein Mr. Earnshaw states that he made use of rubber covered belting in the machine shown in his Patent No. 2,168,329 [Ex. 2, Exhibit Book, p. 247]. This particular machine comprised upper and lower belts with means for feeding the plastic material onto the upper stretch of one of the belts and fed be-

tween the lower stretch of the other belt, with means for driving both belts, and for centrifugally throwing the plastic material from one of the belts as it passed around a roller, together with the means for directing the path of movement of the thrown plastic material.

Appellee does not understand the law to be that it is incumbent upon him to show any conception or reduction to practice date prior to an alleged public use or prior use date, in litigation of the character of this sort.

Patent No. 2,168,329 constitutes a constructive reduction to practice and the disclosure of this patent, together with the testimony of Mr. Earnshaw to the effect that he used rubber covered belting for gripping the plastic material and so used this type of belting on his model, places the date of concept and reduction to practice at least as early as the date of filing of the application for patent, to-wit: January 2, 1937.

Appellant's testimony as to dates of use of either rubber rollers or latex dipped wire brushes is such as to not affect the Earnshaw patent here under discussion. Mr. Butler of the American Pipe and Construction Co. testified as to the use of wire brushes in the Brend machine from 1943 to 1947 [R. 143]; latex dipped wire brushes in 1947 [R. 144] which, of course, do not constitute rubber rollers, with use by American of all rubber rollers in 1950 and 1951 [R. 146]. As stated, we do not see that Appellee has any issue to meet so far as concept and constructive reduction to practice or actual reduction is concerned, and Appellee has discussed the problem only because it was raised by the Appellant.

In this connection, it is interesting to note that the patent to Brend, Appellant's Exhibit B, Exhibit Book,

page 279, while disclosing and claiming wire brushes, sets forth this bit of interesting information on page 3 (second column), lines 17 to 23, inclusive:

“The impelling brushes may assume the form of a pair of high speed endless belts, preferably carrying bristles on their exteriors, and arranged to pass a locus forming a discharge throat between them in the manner and form of the throat 18 between the two rotary brushes shown in Fig. 2.”

Brend, of course, had no concept of the use of a rubber-covered roller or a rubber impregnated or covered belt, but Brend did contemplate a pair of high speed endless belts which, therefore, makes the Earnshaw patent, Plaintiff's Exhibit 2, Exhibit Book, page 245, all the more pertinent in the matters which we have been discussing hereinabove.

**2. The Claims of Earnshaw Patent No. 2,639,943, Appellee's Exhibit 5, Book of Exhibits, page 257, Specifically Claims 6, 7, 13 and 14 Are Valid and Define Patentable Invention.**

This Court has held in *Oriental Foods v. Chun*, 244 F. 2d 909; *Hall v. Wright*, 240 F. 2d 787; *Hutchens v. Faas*, 114 U. S. P. Q. 210; *Berkeley v. Jacuzzi*, 219 F. 2d 785, and *Bergman v. Aluminum*, 116 U. S. P. Q. 233, that novelty and invention are questions of fact, while validity is a question of law.

The Supreme Court of the United States has, in innumerable cases, stated factors that constitute evidence of invention, such as, for instance:

Doing a thing in a better or more facile way;  
Reducing expense;  
Simplifying the device or operation;

An element or elements for performing a new and different function;

Better results.

See:

*Nye and Nissen v. Kasser*, 96 F. 2d 420 (C. C. A. 9);  
*Loom Co. v. Higgins*, 105 U. S. 580,

and a long list of cases following this decision as appears in Walker on Patents, Deller's Edition, Volume I, commencing page 147.

We have the testimony of both Mr. Earnshaw, the Appellee here, and the Appellant's witnesses, Mr. Butler and Mr. Jenkins, which has been quoted extensively from the record in this brief, at pages 7 to 11, to the advantages of the rubber rollers over wire brushes, to-wit, the use of rubber rollers was safer to the workmen [R. 154]; the life of the rubber rollers was longer because the rubber rollers could be recut at least two to three times and would, therefore, handle more yardage or more poundage of material [R. 158, 159]; that the rubber rollers would handle up to 400 cubic yards of material against 300 yards for the wire brushes [R. 159, 160]; and that wire brushes were more expensive than rubber rollers [R. 161]. All of these factors, testified to by the Appellant's own witnesses, Butler and Jenkins, evidences an invention within the cases referred to *supra*.

The District Court stated in its Opinion [R. 60]:

"By the same token, the use of rubber brushes in this type of machine does not seem to be disclosed in the prior art. And the Earnshaw patents 2639942, 2639943 and 2681725 have additional elements of originality. So we conclude that on the subject of

invalidity, the defendant has not met the burden of proof and that the Earnshaw patents referred to are invention over the prior art.”

Within the decisions of this Court enumerated *supra*, the District Court had the duty of finding on the questions of novelty and invention.

### Conclusion.

We submit that the District Court was not required within the authorities to pass on the question of infringement by American, the Appellant here, of the Earnshaw patents; the District Court found the Earnshaw patents to be valid but not included within the terms of the License Agreement between the Appellant and Appellee. We submit that all of the Earnshaw patents, Nos. 2,639,942, 2,639,943 and 2,681,725 are valid.

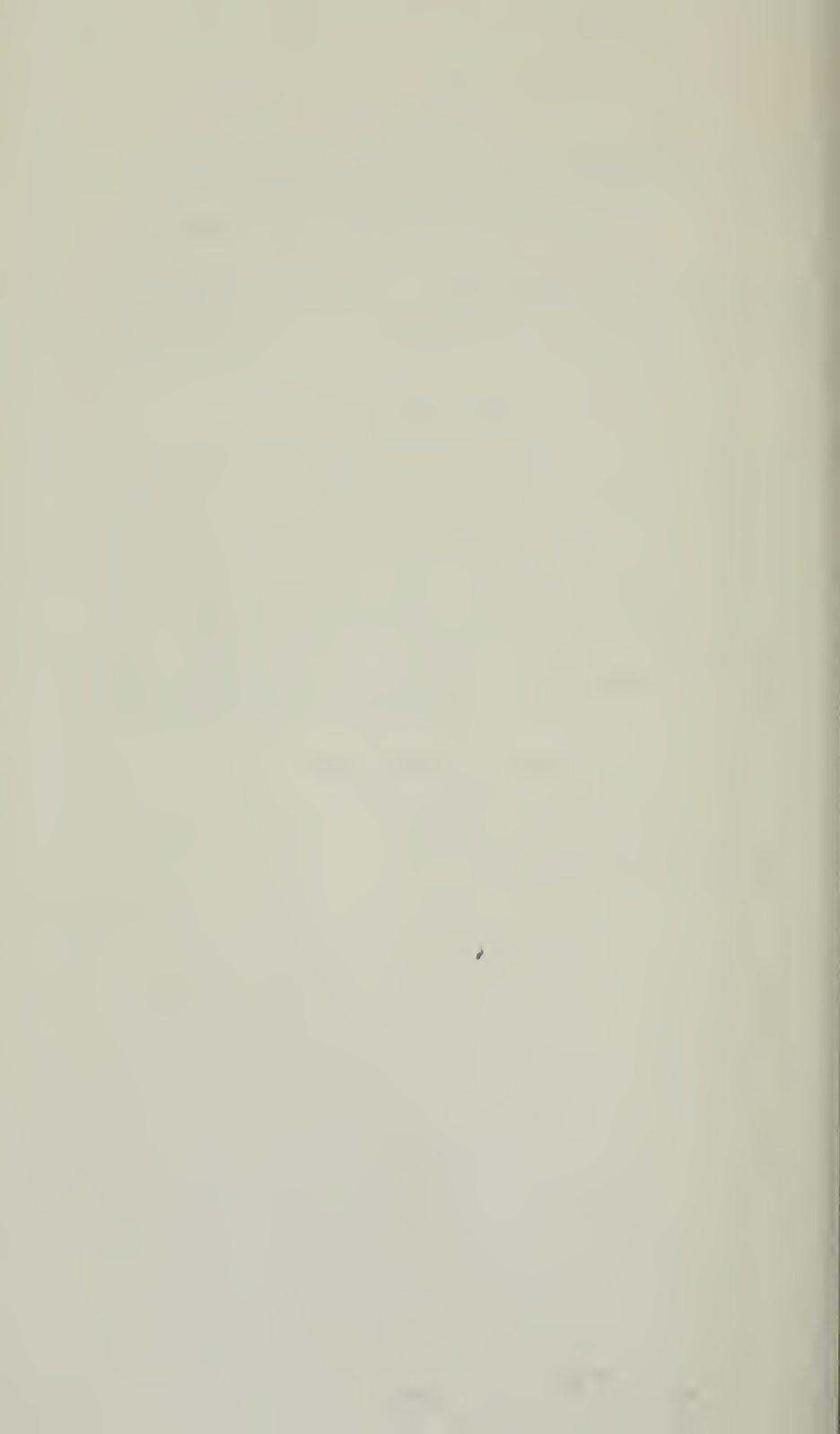
Respectfully submitted,

J. CALVIN BROWN,

*Attorney for Appellee.*







No. 15,630

IN THE

United States Court of Appeals  
For the Ninth Circuit

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AMERICAN PIPE AND CONSTRUCTION Co.,  
a corporation,

*Appellant,*

vs.

SPENCER A. EARNSHAW,

*Appellee.*

REPLY BRIEF ON BEHALF OF APPELLANT  
AMERICAN PIPE AND CONSTRUCTION CO.

---

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**REPLY BRIEF ON BEHALF OF APPELLANT  
AMERICAN PIPE AND CONSTRUCTION CO.**

---

**IN GENERAL.**

To simplify the issues for the Court, we find it necessary to reply briefly to the Brief On Behalf Of Appellee, Spencer A. Earnshaw.

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**APPELLEE'S ARGUMENT THAT CLAIMS 6, 7, 13 AND 14 OF LETTERS PATENT NO. 2,639,943 ARE VALID IS BASED ON PREMISES WHICH NOT ONLY ARE UNSUPPORTED BY THE EVIDENCE BUT ARE CONTRARY TO THE EVIDENCE.**

**A. Appellee's argument that the prior public knowledge and use by Lock Joint Pipe Company in 1946 of brushes or rubber rollers was established solely by "unsupported" oral testimony is contrary to the record.**

The testimony of the witness Kennison, commencing at R. 173 and continuing through R. 193, that rubber

brushes or rollers were built, installed in a Brend machine and used to commercially make commercial pipe in 1946, is fully corroborated by documentary evidence. This documentary evidence includes dated drawings (R. 342) and dated correspondence, orders and invoices (R. 343 to R. 350, inclusive). Certainly, such fully documented proof is not only satisfactory proof, but proves the fact beyond reasonable doubt and is not solely "unsupported oral testimony of one witness" as is argued by appellee. It was certainly satisfactory to the trial court because the trial Court found as follows:

"7. That during the year 1946 Lock Joint Pipe Company, of New Jersey, at their plant at East Orange, New Jersey, caused to be designed and manufactured brushes for the 'Brend' machine having an outer periphery of rubber, which rubber outer periphery was ribbed longitudinally.

8. That during the year 1946 said Lock Joint Pipe Company installed such rubber brushes in a 'Brend' machine in lieu of wire brushes and successfully coated pipe with such 'Brend' machine so fitted with rubber brushes." (R. 62 and 63.)

In view of the above, it cannot be said that these findings by the trial Court are clearly erroneous and should be set aside, and therefore appellee's argument that the patent claims in issue are not invalid because of this prior knowledge and use is without weight.

- B. Appellee's argument that the Lock Joint prior use and knowledge was "concealed and kept secret" is contrary to the evidence.

Appellee's brief erroneously states on page 17 the following:

"\* \* \* Nowhere in the testimony is there any statement by Kennison or by any one else connected with Lock Joint that the so-called experiments were not conducted in secret, that what was done was not suppressed, nor concealed. \* \* \*"

and from this erroneous statement, appellee in his brief concludes and argues as follows:

"An invention, the discovery and use of which is not made public but is concealed and kept secret, will not anticipate a patent for the same device thereafter discovered."

Appellee, in making such a statement on page 17 of his brief, must have overlooked the testimony of Adolph G. Butler appearing at R. 165 as follows:

"Q. When did you first hear of the use of the rubber rollers on the Brend machine?

A. From Hugh Kennison back along in 1946 or '47.

Q. And who is Hugh Kennison?

A. He is the chief engineer for the Lock Joint Pipe Company."

In fact, the trial Court found as follows (R. 63):

"9. That Lock Joint Pipe Company, prior to the year 1948, fully informed Defendant, American Pipe and Construction Co., of its said use of rubber brushes in a 'Brend' machine."

Clearly, the prior use and knowledge of the use of rubber brushes in a Brend machine by Lock Joint Pipe Company, as testified to by the witness Kennison, was a prior public knowledge and use and was proved beyond reasonable doubt. Therefore, appellee's argument that such use was "concealed" and "kept secret" is contrary to the evidence and finds no support in the record, and this basis of arguing that the contested claims are valid is without support.

**C. Appellee's argument that substituting rubber brushes in the Brend machine for wire brushes amounts to invention is clearly refuted by the record.**

Appellee argues at great length that rubber brushes are more enduring and wear longer than wire brushes, but he fails to argue that any different result or improved operation of the Brend machine results from the substitution of rubber brushes for wire brushes. As a matter of fact, the witness Butler, when on the stand, testified that an investigation of the merits of wire brushes versus rubber brushes, made by him after he gave his deposition (quoted by appellee in his brief), showed that there was no particular advantage in length of life in the use of rubber rollers or brushes in lieu of the wire brushes. See Butler testimony as follows (R. 148):

"Q. Now, these rubber rollers last longer than the wire, don't they?

A. No, they do not.

Q. Well, don't you get more use out of one rubber roller than you do out of one wire brush?

A. I have just completed the research since this controversy started, and I find that that is not the case."



Mr. Butler testified again at R. 158 as follows:

“A. I have it in pounds. We can put 449,000 pounds of material through before they are changed.

Q. That is the rubber?

A. That’s right.

Q. And what about the brush?

A. The Portland plant reported here just recently they put 665,000 pounds through the wire brushes.”

Certainly, the selection of the best material to decrease abrading of a rotary brush or roller is not invention, particularly in view of the record showing prior art patents employing rotors similarly coated with rubber for the same reason. See the Hamill Patent No. 2,530,767. (R. 382.) We quote the following from that patent:

“The object of the present invention is a gear-tooth pump which reduces abrasive action on the meshing surfaces; \* \* \*.”

\* \* \* \* \*

“The pumping wheels may be wholly of rubber \* \* \*.”

\* \* \* \* \*

“Where abrasive substances are present in the liquid, it is preferred to provide both wheels with the elastic or resilient provision\* to avoid a possible lapping action, but in suitable application, one wheel only may be so constructed.”

Where it is taught in an analogous art to use rubber coated counter-rotating rotors to reduce abrasion, can it possibly be considered to be patentable invention to substitute a rubber roller for a wire brush in the Brend

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\*Rubber periphery.

machine? We urge that appellee's argument that patentable invention is present is without merit.

**D. Appellee's reliance on the District Court's statement that the Earnshaw patents "have additional elements of originality" to sustain the claims in issue is likewise without merit.**

A simple reading of the claims which we contend are invalid, which are claims 6, 7, 13 and 14 of Patent No. 2,639,943, will demonstrate beyond doubt that these claims do not include anything but the substitution of rubber rollers for the wire brushes in the Brend machine. We quote claim 7 as an example:

"A machine for applying particled material of the character set forth, including a drum provided with a resilient surface, a second drum providing an opposing surface to the first drum, means for rotating the second drum, and means for feeding particled material between the surfaces of the two drums, the resilient surface of the first drum maintaining particled material against the surface of the second drum to discharge the particled material at a velocity sufficient to compact the particles of said material against a surface at a distance from the machine."

Notice that this claim covers only a pair of rotary drums having resilient surfaces and adapted to be counter-rotated as in the Brend machine. Consequently, if there are other additional elements of originality in the machine shown in this patent, they are not included within the claims which we contend are invalid. Therefore, appellee's reliance on the Court's statement as above quoted to infuse validity into these invalid claims is without merit.

APPELLEE MAKES NO ARGUMENT IN HIS BRIEF THAT THE DISTRICT COURT WAS CORRECT IN FAILING TO PASS ON THE ISSUE OF INFRINGEMENT OF ANY OF THE CLAIMS OF THE EARNSHAW PATENTS BY THE BREND MACHINE USING RUBBER ROLLERS IN LIEU OF WIRE BRUSHES.

We contend that one of the principal errors of the District Court was in failing to find, conclude and adjudge that the Brend machine, when equipped with rubber brushes in lieu of wire brushes, did not infringe any of Earnshaw's patents Nos. 2,639,942, 2,639,943, and 2,681,725. (See assignment of error 3.) We argue in our opening brief that the issue of infringement was raised by the Counterclaim and that the Court should have, under the facts found by it, granted a judgment to counterclaimant that the Brend machine, when equipped with rubber brushes in lieu of wire brushes, did not infringe any of the Earnshaw patents in suit. We argue that this issue is clearly raised and the Court should have decided it and awarded judgment in accordance with its findings. Appellee, in his brief, advances no argument to dispute this contention as far as we can determine from his brief.

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### CONCLUSION.

We submit that the District Court erred as set out in the specification of errors in our opening brief, and that the Judgment should be modified.

Dated, March 18, 1958.

Respectfully submitted,

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OSCAR A. MELLIN,

HILL, FARRER & BURRILL,

*Attorneys for Appellant.*



No. 15632

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In the United States  
**Court of Appeals**  
For the Ninth Circuit

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THOMAS CHARLES STEVENS, Appellant

v.

UNITED STATES OF AMERICA, Appellee

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**BRIEF FOR THE UNITED STATES**

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BEN PETERSON  
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**FILED**

FEB 28 1958

PAUL P. O'BRIEN, CLERK





No. 15632

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In the United States  
**Court of Appeals**  
For the Ninth Circuit

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**BRIEF FOR THE UNITED STATES**

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## OPINION BELOW

The judgment of the District Court was rendered without an opinion.

## JURISDICTION

On September 6, 1956, a one count Indictment was returned against the appellant in the United States District Court for the District of Idaho, charging the defendant with a violation of the White Slave Traffic Act, 18 USC 2422. (R. 1)<sup>1</sup> Jurisdiction was conferred on the District Court by 18 USC 3231 and 18 USC 3237. After a jury trial, appellant was found guilty as charged. (R. 27) A sentence of four years was imposed and judgment entered on May 25, 1957. (R. 3) Notice of appeal was filed on May 29, 1957. (R. 35) The jurisdiction of this court is invoked under 28 USC 1291.

## STATUTES INVOLVED

18 U. S. C.:

### "SEC. 2422. COERCION OR ENTICEMENT OF FEMALE

Whoever knowingly persuades, induces, entices, or coerces any woman or girl to go from one place to another in interstate or foreign commerce, or in the District of Columbia or in any Territory or Possession of the United States, for the purpose of prostitution or debauchery, or for any other immoral purpose, or with the intent and purpose on the

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1/ References preceded by "R." are to the Transcript of Record; references preceded by "Tr." are to the Transcript of proceedings upon trial.

part of such person that such woman or girl shall engage in the practice of prostitution or debauchery, or any other immoral practice, whether with or without her consent, and thereby knowingly causes such woman or girl to go and to be carried or transported as a passenger upon the line or route of any common carrier or carriers in interstate or foreign commerce, or in the District of Columbia or in any Territory or Possession of the United States, shall be fined not more than \$5000 or imprisoned not more than five years, or both."

### STATEMENT OF THE CASE

Appellant's statement of the case (Br. 2-6) is inadequate and incomplete in many respects and argumentative. Accordingly, the Government submits the following summary of the evidence and record:

The Indictment charges appellant with on or about April 9, 1956, persuading, inducing, and enticing a woman to go from San Francisco, California to Wallace, Idaho for the purpose of prostitution, debauchery, and other immoral purposes, and thereby knowingly causing her to be transported as a passenger upon the line of a common carrier in interstate commerce. On May 9, 1957, the appellant filed a Motion for Bill of Particulars. (R. 17-18) Thereafter, the appellee voluntarily disclosed to the attorney for the appellant that the name of the woman persuaded, induced, and enticed to go from San Francisco, California to Wallace, Idaho was the appellant's wife, Mrs. T. C. Stevens, who was also known by other names, and who will be referred to herein as Sharon Stevens,

2/ and that the name of the common carrier on which she traveled was United Air Lines from San Francisco, California to Spokane, Washington, via Boise, Idaho. (R. 21) After a hearing, the court denied the Motion, except as to those things which appellee offered to furnish. (R. 19)

Upon application of the appellee (R. 7) on November 9, 1956 that appellant's wife, Sharon Stevens, was a material witness, the court thereafter, on November 13, 1956, entered an order and issued a warrant for the arrest of Sharon Stevens as a material witness. (R. 9-11) She was thereafter admitted to bail on November 16, 1956 for her appearance as a witness at the trial. (R. 12-13) Her bail was continued until the completion of the trial.

Other pre-trial Motions were made and Orders entered, none of which, however, are pertinent to the issues presented in the appeal.

## SUMMARY OF THE EVIDENCE

The evidence to support the verdict may be summarized briefly as follows:

On the afternoon of April 9, 1956, the defendant's wife, Sharon Stevens, departed San Francisco, California for Spokane, Washington, on United Air Lines flight 373. The United Air Lines official called by the prosecution testified that she booked passage as Mrs. T. C. Stevens, and produced company records consisting of a passenger list (Ex. 1) and the original flight coupon (Ex. 2) showing the flight. Sharon Stevens also testified that she was a

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2/ Not to be confused with another witness, Kay Stevens, appellant's former common law wife.

passenger on this flight on that date. Upon her arrival in Spokane, Washington, she registered at the Davenport Hotel, where she spent the night of April 9, 1956. (Ex. 3, Tr. 19) She checked out of the hotel at 7:35 a.m., April 10, 1956, (Tr. 22) and proceeded to Wallace, Idaho by bus. (Tr. 47) Although no passenger lists are maintained by bus companies, a former official of the Auto-Interurban Company, which provided bus service between Spokane, Washington and Wallace, Idaho on April 10, 1956, testified that the company was a common carrier of passengers and had three scheduled trips each day. (Ex. 7, Tr. 27) He also testified that the Greyhound Line operated bus service between Spokane, Washington and Wallace, Idaho, and had several schedules during the day. (Tr. 27-28)

Upon arrival at Wallace, Idaho, Sharon Stevens proceeded to the Oasis Rooms, a house of prostitution, (Tr. 48) operated by Peggy Montague. (Tr. 34) On the date of her arrival in Wallace, Idaho, she appeared at the police station, where she was fingerprinted and registered as a prostitute. (Ex. 8, Tr. 32-33). Sharon commenced working as a prostitute at the Oasis Rooms on the evening of April 10, 1956, (Tr. 51) and was the only girl working at the house on that occasion. (Tr. 55) During that same evening she was interviewed by Special Agents Alfred J. Gunn and Joseph J. Pieper, of the Federal Bureau of Investigation. After a short time, she admitted her true identity and advised them that the story she had given to that point was not completely true. She then advised them that she would give them the full story, and told them of her relationship with the appellant, her activities as a prostitute, and the

names of various individuals for whom she had worked. (Tr. 126, 143) During the interview, Special Agent Pieper wrote down in note form the story related by the appellant's wife. (Tr. 126, Ex. 11) At the conclusion of the interview of Sharon Stevens by Special Agents Gunn and Pieper, she seemed very cooperative, and agreed to keep their Bureau informed of her whereabouts. (Tr. 127, 146) She voluntarily signed the note stating that she freely made the statement and initialed each page and the corrections thereon after Special Agent Pieper related its contents to her. (Tr. 127) After a few days, Sharon Stevens left the Oasis Rooms and returned to the appellant in San Francisco. During the short period she worked at the Oasis Rooms she maintained a record of the amount of money she received in her work. (Ex. 15, Tr. 53-54)

Sharon Stevens was called as a Government witness, and was also the only witness called by appellant in defense of the charges set forth in the Indictment. On direct examination by counsel for the Government, she testified freely as to facts pertaining to her trip from San Francisco to Wallace, and to other matters concerning her work as a prostitute. Her testimony was so framed that appellant was in no way implicated with her activities. When her prior statement was used for purposes of refreshing her recollection, she denied making such statements and then categorically denied that there was anything at all correct in the statement. (Tr. 83) She did state that when she was in Wallace she told appellant what she was doing and advised him of the amount of money she was making, but denied that she sent him any money at that time. (Tr. 59-60)



In the court's discretion, the prosecution's witness, Sharon Stevens, was declared a reluctant and hostile witness (Tr. 84) after specifically denying making prior statements pertaining to the appellant and herself and advising that there was hardly anything in the statement that was correct. (Tr. 80-84)

On cross examination by the appellant, Sharon Stevens denied that her husband had anything to do with her ever being a prostitute and repeatedly urged her to stop engaging in it; that her trip to Sacramento was without his knowledge, and that he had nothing whatever to do with her coming to Wallace, Idaho, and in fact discouraged her going; that he did not furnish her any of the money for the trip, and indicated he might not be there when she got back; that he did not share in any of her income, but that he did drive her to the airport at the time she left. (Tr. 89-91) With respect to the statement made to Special Agents Pieper and Gunn, she advised that she didn't think there were two words of truth in it, and particularly if there was anything in the statement to indicate that the appellant had anything to do with persuading her to go from San Francisco, California to Wallace, Idaho for the purpose of prostitution that it was a lie. (Tr. 99)

On redirect examination by the Government, Sharon Stevens admitted that she had been living with her husband since she left Wallace; that she has discussed the case with him; that she had talked to Mr. Hamilton, the appellant's attorney about the case, and that she had been on bail as a material witness for the Government pending the trial of the case. (Tr. 101-102) She also stated that she and her husband

were in Miles City, Montana in August or September 1955, when she worked as a prostitute in a house of prostitution by the name of Nelda's. (Tr. 110)

After reaffirmance by the court of its ruling declaring Sharon Stevens a hostile witness to the appellee (Tr. 118), she was recalled to the stand for further cross examination. When questioned by counsel for the appellant concerning the inconsistencies of her former statement with her testimony, she claimed that she had difficulty reading the notes as they were illegible. (Tr. 120-121) Exhibit No. 11 was then admitted in evidence over the objection of the appellant that it was incompetent, immaterial, irrelevant, and hearsay as to the defendant, which was, however, limited by the statement of appellant's counsel that the "illegibility of the original notes was the issue." (Tr. 131)

The defense was a repetition of the denial by Sharon Stevens of any participation by the appellant in her transportation from California to Idaho for the purposes of prostitution, as charged in the Indictment, going to Wallace, Idaho to work as a prostitute, giving her any money for the ticket (Tr. 187), and again denied that she had given a true statement to the investigators in Wallace, Idaho. (Tr. 189)

On appellant's direct examination, she testified that when she was in Montana she went to work at Nelda's in Miles City. On cross examination, she advised that she and the appellant went together from Billings to Miles City because he was offered a job there, and because of her loneliness she started working at Nelda's. (Tr. 190)

She claimed that he knew of this employment after they left Miles City. (Tr. 193-194) At this time she was 17 years of age. (Tr. 195) With respect to the memorandum made on a calling card (Ex. 9), she reiterated her statement that a prostitute friend by the name of Vickie with whom she worked at Sacramento was the one who wrote the information down, and denied the truth of her statement to the FBI agents that she memorized it and her husband wrote it down when he came after her. (Tr. 199-200) She again denied the truth of statements to the agents implicating her husband and reiterated that he only drove her down to buy the ticket and out to the airport to take the plane, but did not provide her with any money or give her any instructions concerning what to do when she arrived at Spokane, Washington or Wallace, Idaho. (Tr. 200, 202-203) She further testified that all of the time she has been living with her husband, when employed, he worked as a part-time cook, tended bar, or gambled. (Tr. 203).

Ethel Barrett testified for the prosecution that she operated a house of prostitution in Sacramento, California, known as The Ranch, during the early part of 1956. She identified Sharon Stevens as a girl known to her as Jean Summers, who worked as a prostitute at The Ranch during the latter part of March 1956. (Tr. 38-41). The witness stated that she returned to The Ranch on March 30, 1956, at which time Sharon left The Ranch. (Tr. 39) Ten days later Sharon traveled from San Francisco to Wallace to work at the Oasis Rooms. It was at The Ranch that Sharon learned of the possibilities of working at the Oasis Rooms in Wallace, Idaho.

(Tr. 48) She claimed it was there that her friend, Vickie, a prostitute with whom she worked, told her about Wallace and wrote the notations on a calling card, "Peggy, Wallace, 1-4041." (Tr. 50, Ex. 9) "Peggy" referred to Peggy Montague, the operator of the Oasis Rooms; "Wallace" referred to Wallace, Idaho; and "1-4041" referred to the telephone number of the Oasis Rooms. (Tr. 45, 50, Ex. 18)

Kathy Morgan, called by the prosecution, testified that she met appellant, whom she knew as Steve, in San Francisco during the last of 1955 or the first part of 1956. She testified that she met him at the Red Robin Cocktail Lounge, where she was employed as a waitress. (Tr. 166-167) She testified that he was in the cocktail lounge every day during the daytime and never mentioned what type of work, if any, he was engaged in. (Tr. 168) She was a prostitute (Tr. 172), and just before the birth of her baby on March 6, 1956 (Tr. 169) appellant asked her if she knew where he could find some "trick shorts" for his wife. (Tr. 168-169) She described "trick shorts" as being the kind of clothes that prostitutes work in. Sharon Stevens, known to the witness as Jean, was not present at the time appellant asked for these "trick shorts." They were given to her at a later time when he brought Sharon to the bar and from the bar Kathy and Sharon went together to her apartment located near the bar. (Tr. 169) She also testified that sometime after she met appellant, he mentioned to her that he was going to see his wife, who she imagined was out of town, although he never stated. At the time he asked her for the "trick shorts," the witness recalled the conversation as being:

“Do you know where I can get some shorts for Jean? She’s going out of town.”

“I said that I had some and if he wanted them, he could have them. He had given me the stroller and I thought it would be nice to give them to him.” (Tr. 171)

A former common-law wife of the appellant, Kay Stevens, testified for the prosecution that they had lived together from 1952 until about August of 1955. Sharon Stevens, known to her only as Sharon, lived at the same motel in Salt Lake City. The appellant and Kay Stevens moved from Salt Lake City to Billings, Montana in 1955, and lived together there until August or September of 1955, when she found him gone one day when she returned from work. (Tr. 176) During the time the appellant and Kay Stevens lived together he mentioned to her that prostitution was a good way to make money and asked her to become a prostitute, which she refused. (Tr. 178) After appellant left Kay Stevens in Billings, Montana in August or September of 1955, he telephoned her from San Francisco on several occasions, and early in December 1955 had a conversation with her over the telephone advising her that if she were interested in becoming a prostitute to go to Nelda’s in Miles City, a house of prostitution, and gave her the impression that if she mentioned his name that would fix it for her. (Tr. 178-179)

At the close of the Government’s case, appellant moved for a directed verdict of acquittal on the grounds that the evidence presented by the Government, considered in the most favorable light, would be insufficient to sustain a verdict of guilty. The



motion was denied. (Tr. 183-184)

At the completion of the charge, the court excused the jury to entertain exceptions. None were taken. (Tr. 222)

Following the verdict of guilty, appellant filed a motion in arrest of judgment on the grounds that the Indictment did not state facts sufficient to constitute an offense against the United States, and the conviction was not supported by the evidence. (R. 28) The motion was denied. (Tr. 228) Judgment was then entered and appellant was sentenced to serve a term of four years in an institution designated by the Attorney General of the United States. (Tr. 229)

## ARGUMENT

### I

#### THERE WAS SUBSTANTIAL COMPETENT EVIDENCE TO SUPPORT A CONVICTION

It is not for the court to weigh the evidence or to determine the credibility of witnesses. The verdict of the jury must be sustained if there is substantial evidence, taking the view most favorable to the Government, to support it. *Glasser v. United States*, 315 US 60, 80. The evidence is uncontroverted that appellant drove his wife to a downtown air line ticket office in San Francisco on the day of her departure to purchase her ticket, and that he later drove her to the airport for her departure. At the airport he was the recipient of an insurance policy purchased by his wife and naming him the beneficiary. The evidence is uncontroverted that appellant's wife



worked as a prostitute on a call girl basis in San Francisco, California, and in a house of prostitution at Sacramento, California, within the weeks and months preceding her travel to Wallace, Idaho. The record is clear that her trip to Wallace, Idaho was for the specific purpose of working as a prostitute at the Oasis Rooms in Wallace, Idaho, and that she did engage as a prostitute at that house upon her arrival. Her flight from San Francisco to Wallace was supported by competent airline records; her arrival in and departure from Spokane, Washington was supported by competent hotel records; to show that her trip from Spokane, Washington to Wallace, Idaho could, as she testified it was, be made by interstate motor bus service, competent bus schedules were admitted into evidence; and her registration as a prostitute with the Police Department in Wallace, Idaho was supported by competent police records.

In support of the jury's verdict that appellant was instrumental in his wife making this trip, there was competent evidence in the record to show that a month or so prior to her departure appellant requested and received a "trick suit" for the use of his wife, from Kathy Morgan, a prostitute. There was also competent evidence to show that within approximately four months prior to Sharon's departure from San Francisco, appellant suggested to his former common-law wife, Kay Stevens, that she become a prostitute, and advising her that if she would go to Nelda's in Miles City, Montana, she would be accepted if she were to only mention appellant's name. The jury was also at liberty to consider testimony showing that appellant had no apparent steady employment, and was known by one of the

bellhops in San Francisco, California, who placed calls for his wife, and often saw them together at a bar near one of the hotels, where calls were placed for her.

In a prosecution under the White Slave Traffic Act, where there were controverted questions of fact before the jury, if there was evidence from which the required intent could be fairly and reasonably found, the judgment should be affirmed. *Talbot v. United States*, 286 F. 21, (CA7, 1922).

## II

THE COURT IN ITS DISCRETION PROPERLY DECLARED APPELLANT'S WIFE A HOSTILE WITNESS, PERMITTING HER IMPEACHMENT.

Appellant contends that there was no legal basis for declaring appellant's wife a hostile witness on the ground that the Government could not claim surprise. (Br. 10) In support of this contention, appellant alleges that the Government failed to make inquiry as to what her testimony would be before calling her to the stand. This being so, he argues that the Government could not request the court to exercise its discretion in declaring her a hostile witness, nor invoke the rule permitting impeachment of its own witness.

The law is well settled that, upon proper representation by counsel for the Government that a witness is reluctant or hostile, the court may in its discretion declare the witness hostile and permit the Government to cross examine the witness. *Fields v. United States*, 164 F. 2d 97, cert. den. 332 US 851,

rehearing denied 333 US 839 (CCA DC); *United States v. Goldstein*, 135 F. 2d 359 (CCA 2, 1943); *Gariepy v. United States*, 189 F. 2d 459 (CCA Mich.) The court did not abuse its discretion.

The strict rule at common law has long since been relaxed to permit the impeachment of a party's own witness in the case of surprise by his testimony. *United States v. Graham*, 102 F. 2d 436, cert. den. 307 US 643, rehearing denied 308 US 632 (CA 2, 1939) or of a witness whom the Government is under a legal duty or obligation to call, *Meeks v. United States*, 179 F. 2d 319 (CA9, 1950). She was the one who first discussed the matter with the Federal Bureau of Investigation agents, and was the only person other than appellant who under the circumstances had knowledge of the true facts surrounding her transportation from San Francisco, California to Wallace, Idaho. The fact that she was also the wife of appellant and resided with him continuously to the time of trial did not relieve the Government of the obligation to call her since her testimony was competent. *Caminetti v. United States*, 242 US 470; *United States v. Bozeman*, 236 Fed. 432.

Furthermore, the Government was justified in believing that the statement she made to the investigators was the truth, and she appeared friendly and cooperative. Consequently, counsel for the Government was privileged to believe that when called as a witness at the trial to testify under oath, she would tell what the attorney believed to be the truth. The court was well justified in accepting the assurance of surprise. *United States v. Graham*, supra, at page 442. The Government had a right to anticipate that, under oath and in court, she would testify in accord-

ance with her story to the Federal Bureau of Investigation. *Weaver v. United States*, 216 F. 2d. 23, 25 (CA9, 1954).

The showing of reluctance to testify, hostility, a witness whom the Government was obligated to call and surprise, all appearing to the court, it was within its sound discretion to permit impeachment of the witness by the showing of previous contradictory statements. *Weaver v. United States*, supra. A witness whose past equivocations disclose an unwillingness to speak the truth may be prodded by questioning her as to her earlier declarations, even though incidentally they come to some extent before the jury. *United States v. Freundlich*, 95 F. 2d 376, 379, (CA2, 1938).

The admissibility of the notes constituting the memorandum of the prior statement made by the witness will be discussed hereafter.

### III

INTENT, PURPOSE AND MOTIVE OF APPELLANT MAY BE PROVED BY CONDUCT WITHIN A REASONABLE TIME OF THE OFFENSE.

The necessary intent, purpose and motive on the part of an accused in violation of the White Slave Traffic Act may be proved by circumstantial evidence. And as bearing upon that essential element of the offense, the conduct of the parties within a reasonable time before and after the transportation may be taken into consideration. *Dunn v. United States*, 190 F. 2d 496, 498; *Lindsey v. United States*, 227 F. 2d 113. See also *Tedesco v. United States*,



118 F. 2d 737 (CA9, 1941). Appellant contends that activities of appellant's wife, not having been connected to the appellant and being too remote in time, allegedly from one to two years prior to the offense, were erroneously admitted in evidence.

Concerning his wife's turning out as a prostitute at Nelda's, in Miles City, Montana, this occurred, according to her testimony, in August or September of 1955, or approximately seven or eight months prior to April 9, 1956, the date of the violation under which appellant stands convicted. She testified that appellant was in Miles City at that time. (Tr. 111) It was this same house of prostitution that appellant a few months later, in December 1955, to which appellant suggested to his former wife, Kay Stevens, that she proceed in order to become a prostitute.

With respect to her employment as a prostitute at The Ranch, in Sacramento, California, the evidence was clear that she was still living with her husband and that she departed from this house on March 30, 1956, or approximately ten days before she departed from San Francisco to Wallace, Idaho.

Appellee contends that these events occurred well within a reasonable period of time from the date of the offense charged and were clearly admissible to show purpose, intent and motive of appellant.

#### IV

#### THE COURT DID NOT ERR IN RULING ON THE ADMISSIBILITY OF EVIDENCE.

The appellant contends that Exhibit 4 is irrelevant and thus inadmissible, and that Exhibit 9 was here-

say and irrelevant and likewise inadmissible. No claim was made by appellant that their admission was prejudicial to appellant, and no grounds urged in support thereof. Assuming, arguendo, that they were irrelevant and inadmissible, the error, if any, in admitting them was harmless.

Appellant's principal ground of contention that prejudicial error was committed was directed to the admission of Exhibit 11. (Br. 10, 14) Appellant contends that this exhibit, which consisted of notes taken by the Federal Bureau of Investigation agents at the time appellant's wife was interviewed, which at the time was acknowledged by her, was admitted as substantive evidence rather than limited to purposes of impeachment. Appellant's brazen contention that the calling of appellant's wife by the Government as its witness was a ruse or device by which, under the impeachment doctrine, it could obtain the admission of inadmissible evidence as substantive evidence is completely lacking in merit.

The unique position of this witness and the circumstances surrounding the admission of Exhibit 11 must be kept in mind. The fact that she was properly subject to impeachment has been discussed hereinbefore. In addition to being the Government's principal witness, whom it was obliged to call, Sharon Stevens was the only witness appellant relied upon in defense of the charges set forth in the Indictment. Exhibit 11 was first used by the Government in an attempt to refresh the recollection of the witness. When this failed as to the questions and former statements implicating her husband, the appellant, and only then after cross examination by appellant's counsel in which she denied that there



was any truth at all in the statement, and even later after further cross examination by appellant's counsel to the effect that her memory could not be refreshed by the notes because they were illegible, was the exhibit admitted in evidence. The prior statement made by the witness was used further to impeach her by counsel for the Government when cross examining her as a witness for appellant. This action was clearly proper, and it was admissible since it contradicted and was inconsistent with the witness's testimony. *Weaver v. United States*, supra; *Meeks v. United States*, supra.; *Duarte v. United States*, 171 F. 2d 971 (CA5, 1949). The trial court permitted the introduction of Exhibit 11 solely upon the question of her credibility, and not as substantive evidence, and so charged the jury. (Tr. 213)

Considering the demeanor of the witness in the instant case, the comment of the court in *United States v. Freundlich*, supra, with respect to advising the jury is very much in point:

“ \* \* \* There is always a chance that his answers may betray not only that he said what the minutes report, but that it was true. As it is true of most that takes place in a trial, the right result is a matter of degree, and depends upon the sense of measure of the judge. Perhaps it was safer to have told the jury to disregard this answer; but we cannot think that, considering the vacillation of this witness, it would have been an error to let it stand.”

The admission of the former statement of appellant's wife can be sustained on grounds independent

of whether or not it was limited to purposes of impeachment.

Although a woman who enters interstate commerce for the purpose of prostitution does not commit an offense against the United States. *Dodson v. United States*, 215 F. 2d 196, she is considered an accomplice and her testimony is admissible in prosecutions under the White Slave Traffic Act. *Caminetti v. United States*, *supra*.

In *American Fur Company v. United States*, 2 Pet. 358, 364, 7 L. Ed. 450, the United States Supreme Court said:

“Where two or more persons are associated together for the same illegal purpose, any act or declaration of one of the parties, in reference to the common object, and forming a part of the *res gestae*, may be given in evidence against the others.” (See also *St. Clair v. United States*, 154 US 134, 149.)

The statement of an accomplice is within the exception to the hearsay rule and is admissible although it was made out of the defendant's presence. *Ladrey v. United States*, 155 F. 2d 417 (CA, DC, 1946). The true test in reference to the reliability of the declaration is not whether it was made *ante litem motam*, as is the case with reference to some classes of hearsay evidence, but whether the declaration was uttered under circumstances justifying the conclusion that there was no probable motive to falsify. 20 Am. Jur. 468, Evidence §556.

The Government also contends that the prior state-

ment of appellant's wife is admissible for consideration by the jury as substantive evidence under the reasoning of *Di Carlo v. United States*, 6 F. 2d 364, 368 (CA 2, 1925). In that case, Judge Learned Hand said:

"The latitude to be allowed in the examination of a witness, who has been called and proves recalcitrant, is wholly within the discretion of the trial judge. Nothing is more unfair than to confine a party under such circumstances to neutral questions. Not only may the questions extend to cross-examination, but, if necessary to bring out the truth, it is entirely proper to inquire of such a witness whether he has not made contradictory statements at other times. He is present before the jury, and they may gather the truth from his whole conduct and bearing, even if it be in respect of contradictory answers he may have made at other times \* \* \* The possibility that the jury may accept as the truth the earlier statements in preference to those made upon the stand is indeed real, but we find no difficulty in it. If, from all that the jury see of the witness, they conclude that what he says now is not the truth, but what he said before, they are none the less deciding from what they see and hear of that person and in court. There is no mythical necessity that the case must be decided only in accordance with the truth of words uttered under oath in court."

The Court of Appeals for the Second Circuit has followed this decision in the subsequent cases of *United States v. Graham*, *supra*; *United States v.*

*Block*, 88 F. 2d 618, 620; and see particularly *United States v. Allied Stevedoring Corp.*, 241 F. 2d 925, 932 (1957).

The *Di Carlo* decision has been recognized by this court in *Craig v. United States*, 81 F. 2d 816 (1936); and in *Lindsey v. United States*, 237 F. 2d 893 (1956), where the court, at page 895, stated:

“There is scant basis in reason or experience to admit such statements, except in cases where it affirmatively appears that the prior consistent statement was made at a time when the declarant had no motive to fabricate. Only then can such evidence be considered as having any reliable element of trustworthiness.”

## CONCLUSION

For the reasons stated, it is respectfully submitted that the judgment of the district court should be affirmed.

Respectfully Submitted.

BEN PETERSON

*United States Attorney*

By

KENNETH G. BERGQUIST

*Assistant U. S. Attorney*



No. 15634

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United States  
Court of Appeals  
for the Ninth Circuit

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CONFIDENTIAL, INC., a Corporation,  
Appellant,  
vs.

EDMUND G. BROWN, Attorney General, State of  
California, et al.,  
Appellees.

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Transcript of Record

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Appeal from the United States District Court for the  
Southern District of California  
Central Division.

FILED

AUG - 5 1957

PAUL P. O'BRIEN, CL





No. 15634

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**United States  
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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in *italic*; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in *italic* the two words between which the omission seems to occur.]

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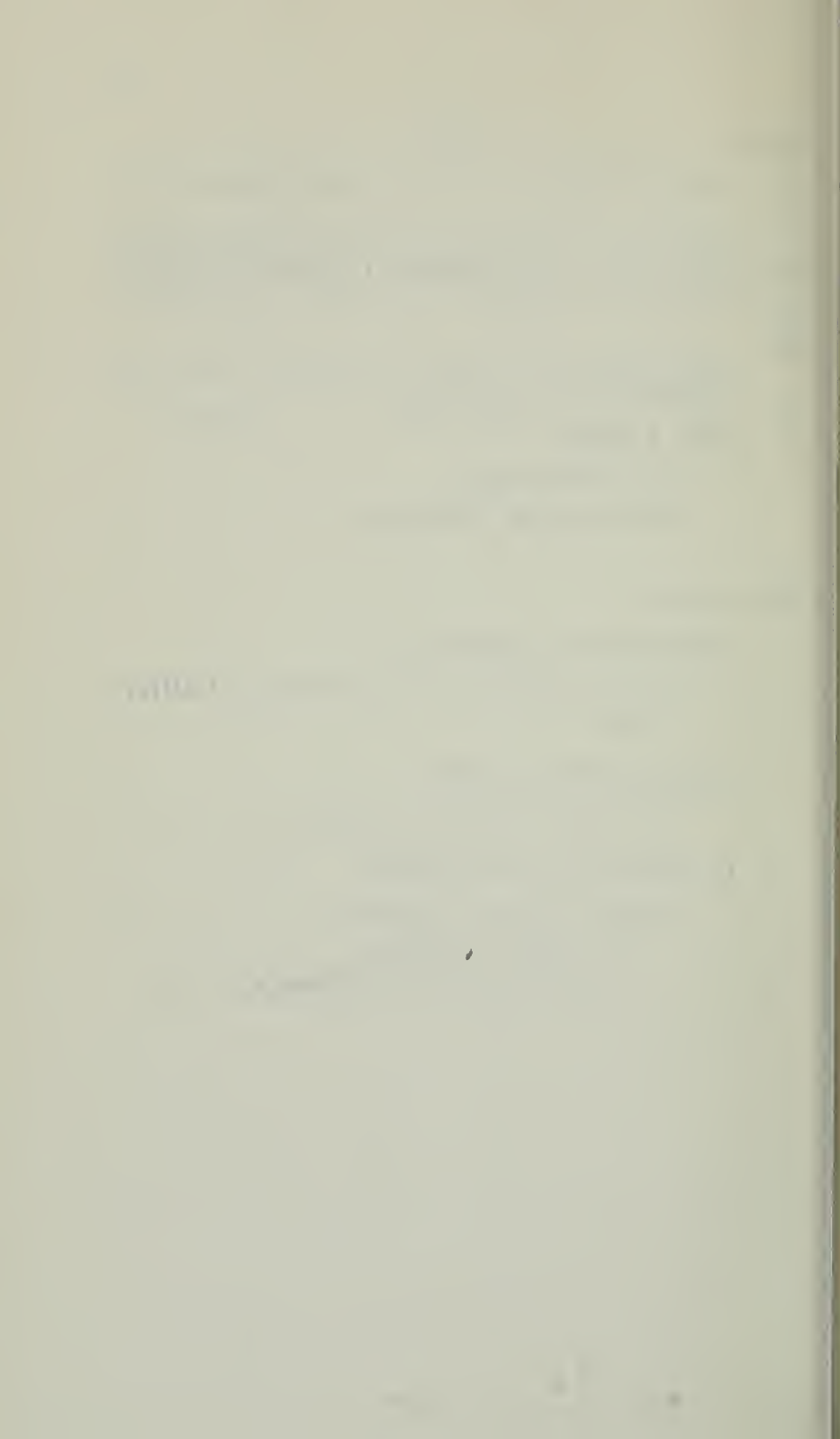
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United States District Court, in and for the Southern District of California, Central Division

No. 725-57—HW

CONFIDENTIAL, INC., a New York Corporation,

Plaintiff,

vs.

EDMUND G. BROWN and CLARENCE A. LINN,

Defendants.

### COMPLAINT

- (1) Damages for Suppression of Sale of Magazines,
- (2) Restraining Order and Injunction,
- (3) Demand for Jury Trial.

Plaintiff for its Complaint alleges as follows:

#### I.

That jurisdiction is founded on diversity of citizenship and amount, in that plaintiff is a corporation organized and existing under and by virtue of the Laws of the State of New York, and defendants, Edmund G. Brown and Clarence A. Linn, are citizens and residents of the State of California, and that the matter in controversy, exclusive of interest and costs, exceeds the sum of Three Thousand (\$3,000) Dollars.

That jurisdiction is also founded on the existence of a Federal issue in that the action arises under

Section 1 of the Fourteenth Amendment to the Constitution of the United States and under U.S.C.A., Title 28, Sec. 1343, in the abridgment of plaintiff's freedom of speech and press by acts of the defendants under [2\*] color of State authority and color of State law, as hereinafter set forth.

## II.

At all times herein mentioned, plaintiff was engaged in the publication and distribution of a certain magazine entitled "Confidential" for public sale and has been granted the right to use the United States mails for its distribution by order of the Postmaster General of the United States. That said magazine is issued on a bi-monthly basis and is devoted to the publication of news items relating to persons prominent in the public eye and events of common public interest.

## III.

That since September, 1952, said magazine has been sold by plaintiff to Publishers Distributing Corp., a New York corporation, which Publishers Distributing Corp. distributes and sells said magazine throughout the United States and to wholesalers in the State of California, who in turn sell same to numerous magazine and newspaper dealers and to the reading public in the State of California. That in the sale of said magazine to Publishers Distributing Corp. by plaintiff Publishers Distributing Corp. has contracted to pay to plaintiff the sum of

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\*Page numbering appearing at foot of page of original Certified Transcript of Record.

14½¢ for each copy of said magazine delivered to it for distribution.

#### IV.

That at all times hereinafter mentioned, the defendants, Edmund G. Brown and Clarence A. Linn, were and now are, respectively, the Attorney General of the State of California and the Assistant Attorney General of the State of California, purporting to act within the scope of their authority as such officers.

#### V.

That on or about May 29, 1957, said defendants, under color of their offices as Attorney General and Assistant Attorney General of the State of California, and under color of California [3] statutes, censored and suppressed the distribution and sale of said magazine by means of communications addressed to said distributor and to California wholesalers of said magazine, threatening them with criminal prosecution if they placed for sale or sold said magazine which was scheduled for sale in California, said acts of the defendants being accomplished in the following manner:

On or about May 29, 1957, defendant, Clarence A. Linn, with the knowledge, consent and authority of defendant, Edmund G. Brown, communicated by telephone with distributor, Publishers Distributing Corp. of New York, and stated that he was the Assistant Attorney General of the State of California; that in his opinion "Confidential" magazine is libelous and obscene and contains matter which vio-

lates California statutes, and that criminal prosecution would follow if it was thereafter placed for sale; that if said magazine was thereafter placed for sale in California he would seek Grand Jury indictments against Publishers Distributing Corp. and its officers.

On or about May 29, 1957, defendants, Edmund G. Brown and Clarence A. Linn, prepared and caused to be published in California newspapers of general circulation their statement to the effect that "Confidential" magazine contains lewd, obscene and libelous matter in violation of California statutes and that any distribution or sale of the magazine in the State of California, will result in criminal prosecution, a copy of said newspaper publication being marked Exhibit "A," attached hereto and incorporated herein as though herein set forth in full.

## VI.

That an issue of said magazine has been printed for sale in June, 1957, and 325,000 copies thereof were regularly scheduled for sale to said distributor for distribution in the State of California. That by reason of the foregoing acts and threats of defendants, said distributor and the California wholesalers and [4] dealers have refused to buy or accept any copies of "Confidential" magazine for distribution in the State of California, and plaintiff is unable to sell or distribute same, to plaintiff's damage in the sum of \$47,125.00, constituting the price payable by Publishers Distributing Corp. to plaintiff for 325,000 copies.

## VII.

That plaintiff has expended large sums of money for the promotion of said magazine and in building up a consumer and advertising demand therefor. That the failure to distribute said issue of the magazine currently printed for sale will cause plaintiff great damage, in that the public demand for and market value of said issue and of future issues will be seriously impaired, to the damage of plaintiff in the sum of \$1,000,000.00.

## VIII.

That the format, general content and nature of said magazine remains substantially the same for each issue, and by reason of said acts and threats by defendants said distributor and wholesalers have refused and do still refuse to accept, distribute or sell any further issues of said magazine. That defendants knew that the format, general content and nature of said magazine remains substantially the same for each issue and that their said acts and threats would suppress the distribution and sale of all future issues of the magazine as well as that currently scheduled for sale. That defendants further knew that their said acts and threats were unlawful and not within the scope of their power or authority as Attorney General or Assistant Attorney General of the State of California or otherwise. That said acts and threats of defendants were performed wilfully and maliciously with the intent to oppress plaintiff and to suppress the currently printed and all future issues of said magazine and



for the purpose of destroying plaintiff's business and causing it to become bankrupt.

That said wilful and malicious acts and threats of [5] defendants have deprived and continue to deprive plaintiff of civil rights guaranteed to it by the Fourteenth Amendment to the Constitution of the United States, to wit, the right to freedom of speech and press.

That on or about June 7, 1957, plaintiff communicated with defendants through defendant, Clarence A. Linn, and informed them of the unlawful nature of their said acts and threats and of the damages resulting therefrom, but defendants refused to retract said statements and threaten to continue to pursue said course of conduct.

That by reason of said wilful, malicious and oppressive acts plaintiff demands punitive damages against defendants and each of them in the sum of \$1,000,000.00.

#### IX.

That by reason of the fact that the format, general content and nature of said magazine remains substantially the same for each issue, said acts and threats of defendants have caused said distributor and the California wholesalers to refuse to accept, distribute or sell any future issues of said magazine in California and have thus caused plaintiff irreparable damage and may bankrupt its business, to the damage of plaintiff in a sum that cannot be fully ascertained. That upon ascertaining any por-

tion of such damage plaintiff will ask leave to amend this Complaint accordingly.

Wherefore, plaintiff prays judgment as follows:

1. For special damages against defendants and each of them in the sum of \$1,047,125.00, and such additional damages as may be provided for by an amendment to Paragraph IX of this Complaint;

2. For punitive damages against said defendants and each of them for said wilful and malicious oppressive acts, in the sum of \$1,000,000.00;

3. That defendants and each of them and their agents, [6] successors, deputies, servants and employees and all persons acting by, through or under them, or either of them, or by or through their order, be restrained and enjoined from engaging in said acts and threats, and defendants and each of them be ordered to execute and deliver written retractions of all said oral and written communications to said distributor, Publishers Distributing Corp., and to all said California wholesalers;

4. That after due notice to defendants a preliminary injunction shall issue, enjoining the defendants and each of them and their agents, successors, deputies, servants and employees and all persons acting by, through or under them, or either of them, or by or through their order, from engaging in said acts and threats, and ordering defendants and each of them to execute and deliver written retractions of all said oral and written communications to said distributor, Publishers Distrib-

uting Corp., and to all said California wholesalers, and that defendants be ordered on a day fixed to show cause why said preliminary injunction should not be granted;

5. That pending the hearing on said preliminary injunction, a temporary restraining order issue without notice, restraining the defendants and each of them and their agents, successors, deputies, servants and employees and all persons acting by, through or under them, or either of them, or by or through their order, from engaging in said acts and threats, and ordering defendants and each of them to execute and deliver written retractions of all said oral and written communications to said distributor, Publishers Distributing Corp., and to all said California wholesalers;

6. For the costs of court incurred herein;

7. For such other and further relief as the Court deems proper in the premises.

ARTHUR J. CROWLEY, and  
BEN LEVIN,

By /s/ ARTHUR J. CROWLEY,  
Attorneys for Plaintiff. [7]

EXHIBIT A

Same Action Looms for Confidential

‘Whisper’ Scandal  
Mag Banned in Cal.

Whisper Magazine, a little sister of Confidential, both published by Robert Harrison, was banned from California newsstands today by the attorney general’s office.

Simultaneously, the attorney general’s office moved to seek extradition from New York of Harrison and others indicted in a secret Grand Jury session May 14, 15.

They, and Francesca de Scaffa, ex-wife of Actor Bruce Cabot, were charged with conspiracy to distribute lewd and obscene material, a felony.

Outlaw Sale

Outlawing the sale of Whisper, Assistant Attorney General Clarence Linn telegraphed warnings to 35 major magazine wholesalers in California that they were selling “lewd, obscene and libelous material.”

Harrison promised to ship 100,000 copies back to New York, Linn said. The banned issue was due to go on sale June 4.

Linn indicated similar measures would be instituted against the next issue of Confidential, due on the newsstands June 20.

Violates Cal. Law

“Major wholesalers” in the state have given “favorable response” to his telegrams, Linn said.

The telegrams said:

“The current ‘Whisper’ magazine now in your possession contains printed matter which is in violation of California statutes prohibiting publication of lewd, obscene and libelous material.

“Distribution of this magazine by you will be deemed part of the conspiracy now the subject of a grand jury investigation, pending in Los Angeles County, and your activity will be called to the attention of that body for appropriate action.

“Your dealers also will be considered parties to the conspiracy.”

Demand is hereby made for jury trial.

ARTHUR J. CROWLEY, and  
BEN LEVIN,

By /s/ ARTHUR J. CROWLEY,  
Attorneys for Plaintiff.

Duly verified.

[Endorsed]: Filed June 13, 1957. [8]

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[Title of District Court and Cause.]

NOTICE OF MOTION AND MOTION FOR  
PRELIMINARY INJUNCTION

To Edmund G. Brown and Clarence A. Linn, defendants in the above-entitled action:

You Will Please Take Notice that plaintiff will move the Court at its Courtroom in the Federal



Building, in the City of Los Angeles, County of Los Angeles, State of California, on Monday, June 17th, 1957, at the hour of 10:00 o'clock a.m., or as soon thereafter as counsel can be heard, for a preliminary injunction in said action to continue until the final determination thereof, restraining defendants, Edmund G. Brown and Clarence A. Linn, and all persons acting by, through or under them, or either of them, or by or through their order, from declaring orally or in writing that "Confidential" magazine contains any matters which are lewd, obscene or libelous, or threatening the publisher, distributors, wholesalers or vendors of said magazine with criminal prosecution or Grand Jury [11] investigation for the distribution or sale of same.

Said motion will be made on the grounds that the aforementioned acts to be enjoined have inflicted and will continue to inflict irreparable damage to plaintiff for which money will not be adequate relief and that plaintiff has no plain, speedy or adequate remedy at law.

Upon the hearing of said motion there will be used the Complaint herein and the affidavit of Arthur J. Crowley, a copy of which is herewith served upon you.

ARTHUR J. CROWLEY and  
BEN LEVIN,

By /s/ ARTHUR J. CROWLEY,  
Attorneys for Plaintiff.



For good cause shown time for service and hearing of the foregoing Notice of Motion and Motion is shortened said service to be made on June 13, 1957, on opposing counsel.

Dated this 13th day of June, 1957.

/s/ HARRY C. WESTOVER,  
United States District Judge.

[Endorsed]: Filed June 13, 1957. [12]

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[Title of District Court and Cause.]

AFFIDAVIT OF ARTHUR J. CROWLEY IN  
SUPPORT OF MOTION FOR PRELIMI-  
NARY INJUNCTION

State of California,  
County of Los Angeles—ss.

Arthur J. Crowley, being first duly sworn, deposes and says as follows:

That plaintiff is unable to distribute its magazine entitled "Confidential" in the State of California by reason of the fact that Publishers Distributing Corp. of New York, the national distributor of said magazine, and the California wholesalers of said magazine refuse to accept, distribute or sell same due to a fear of criminal prosecution by the defendants as Attorney General and Assistant Attorney General of the State of California.

That said fears of the distributor and wholesalers and their resultant refusal to accept, distribute or sell said magazine is directly caused by communications to them from the defendants in [13] their purported capacity as Attorney General and Assistant Attorney General of the State of California threatening them with Grand Jury investigation and criminal prosecution in the event said magazine is placed for sale or sold in the State of California.

That by reason of the foregoing threats by defendants, said distributor and wholesalers not only refuse to distribute and sell the issue of "Confidential" magazine which is scheduled for sale in June, 1957, but also refuse to accept, distribute or sell any future issues of said magazine.

/s/ ARTHUR J. CROWLEY.

Subscribed and sworn to before me this 12th day of June, 1957.

[Seal]      /s/ JANET McDONALD,  
Notary Public in and for Said County and State of  
California.

[Endorsed]: Filed June 13, 1957. [14]

[Title of District Court and Cause.]

MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT OF TEMPORARY RESTRAINING ORDER AND PRELIMINARY INJUNCTION

In the instant case, the Defendants, Edmund G. Brown and Clarence A. Linn, respectively, Attorney General and Assistant Attorney General of the State of California, under color of their offices, censored and suppressed the publication of "Confidential" magazine by personally declaring it to contain lewd, obscene and libelous matter and threatening its distributors and wholesalers with Grand Jury investigation and criminal prosecution. No such authority of censorship is vested in them by any law of the State of California.

California Constitution Article I, Section 9, provides as follows:

"Every citizen may freely speak, write and publish his sentiments on all subjects, being responsible for the abuse of that right; and no law shall be passed to restrain or abridge the liberty of speech or of the press." [15]

Thus the California Constitution provides that there shall be no censorship or suppression of press publications, although an abuse of the right may result in punishment by due process of court.

The Case of *People vs. Armentrout*, 118 C.A. Supp. 761, 1 P. 2d 556, provides as follows:

“The right of free speech and of the free press is guaranteed by the Constitution of California, Article I, Section 9.”

The court goes on to say, “Liberty of circulation is as essential to that freedom as liberty of publishing, indeed without circulation, a publication would be of little value, citing the case of *Ex Parte Jackson*, 96 U.S. 727, 24 L. Ed. 877.” The court further states, “The word publish ordinarily means to disclose, reveal, proclaim, circulate or make public, citing *In Re Monrovia Post*, 199 Cal. 263, 248 P. 1017.” The court further states, “The constitutional guarantee against the abridgment of the freedom of the press means immunity from restraint previous to publication.”

In the case of *People vs. Garcia*, 37 C.A. 2d Supp. 753, 98 P. 2d 265, the court states:

“Citing *People vs. Gidaly*, 93 P. 2d 660 at 669: While a law may be valid which in effect punishes the use of language which has the effect of inciting the unlawful use of violence or the commission of crime, the end may not (save possibly in such extraordinary situations as are mentioned in the authority next hereinafter cited) be attained through the medium of censorship or previous restraint. (Citing cases.) These rights (freedom of speech, press and assembly) may be abused by using speech or press or assembly in order to incite to violence [16] and crime. The people through their Legislatures (or by the initiative) may protect

themselves against that abuse. But the legislative intervention can find constitutional justification only by dealing with the abuse. The rights themselves must not be curtailed. (Citing cases.) As further authority for the propositions declared in the foregoing quotation may now be added the citation of *Schneider vs. State*, 60 Supreme Court 146."

In the *Garcia* case, the court pointed out that under the California Constitution, the Legislature may pass laws which deal with an abuse of the right of freedom of speech and press, but may not curtail the rights. Thus they may punish the abuse but, except only in extraordinary circumstances, they may not pass laws for censorship or suppression. In the instant case the Defendants, acting under color of their offices as Attorney General and Assistant Attorney General of California, and without recourse to any court action and without any authority of law attempted to, and did censor and suppress the issuance of Plaintiff's magazine.

The leading case of *Hannegan vs. Esquire*, 327 U.S. 146 (1946), held that the Postmaster General acted without authority in revoking "Esquire" magazine's second class mailing permit because it did not "contribute to public good and public welfare." In said case the court further stated:

"What is good literature, what has educational value, what is refined public information, what is good art, varies with individuals as it does from one generation to another. \* \* \* But a requirement



that literature or art conform to some norm prescribed by an official smacks of an ideology foreign to our system. \* \* \* From the multitude of competing offerings the public will pick and choose. What seems to one trash may have for others fleeting or even enduring values.” [17]

The case of *Bantam Books vs. Melko*, 25 N.J. Superior 292, is a case directly in point with the instant case. There the court held that censorship of the book, “*The Chinese Room*” by the Defendant, who was Prosecutor of the Pleas of Middlesex County, New Jersey, was subject to injunction. The court in that case went on to say:

“Defendant could have proceeded against Plaintiff or any distributor in an orderly fashion under at least the first of the cited statutes. Had he done so there would then have been called into play the full range of criminal prosecution, from complaint and arrest, through indictment and trial by jury, with a verdict of guilty before any penalty could be invoked.” \* \* \* “There are, then, several alternate and proper legal means at hand for dealing with allegedly obscene and indecent literature, none of which Defendant used. The three statutes referred to give the law enforcement officials effective means of preserving and protecting the community morals, but none of them gives any such official the right to prejudge a situation and act upon it in the way Defendant did in this case. We have here a clear case of previous censorship in the area of literary obscenity. The way of the censor has been



torturous and tortured from earliest times. His story is one of arbitrary judgment and the suppression of much that we now consider good, true and beautiful." The court then goes on to say, "The liberty of the press which the First Amendment guarantees against abridgment by the Federal Government is within the liberty safeguarded by the Due Process Clause of the Fourteenth Amendment from invasion by state action, citing *Gitlow vs. New York*, 268 U.S. 652."

In the case of *Near vs. Minnesota*, 283 U.S. 697, the [18] court held:

"In determining the extent of the constitutional protection, it has been generally, if not universally, considered that it is the chief purpose of the guarantee to prevent previous restraint upon publication." Chief Justice Hughes, speaking for the court in this case, went on to state, "The exceptional nature of its limitations places in a strong light the general conception that liberty of the press, historically considered and taken up by the Federal Constitution, has meant, principally, although not exclusively, immunity from previous restraints or censorship."

The case of *Lovell vs. Griffen*, 303 U.S. 444 (1938), states that in its historic connotation, the press comprehends every sort of publication, and the guarantee of a free press covers distribution as well as publication.

The evil of previous restraint was condemned most recently, in a case of motion pictures in the

case of *Joseph Burstyn, Inc., vs. Wilson*, 343 U.S. 495 (1952).

In the case of *Higgins vs. Krogman*, 140 N.J. Eq. 518, affirmed on appeal in 142 N.J. Eq. 691, the court stated as follows:

“There is ample authority for the proposition that valuable property rights will be protected by injunction from damage or destruction, threatened or resulting, from the arbitrary acts of officials acting without due process of law.” \* \* \* “Insofar as his (the vice-chancellor’s) restraining order was confined to a restraint of the described extra-legal activities, it was clearly, under the undisputed facts and circumstances, a proper exercise of the Court of Chancery’s jurisdiction to protect complainant’s property from irreparable injury threatened [19] by ‘arbitrary acts of officials acting without due process of law.’ ”

And, as was stated in the case of *Ruty vs. Huelsenbeck*, 109 N.J. Eq. 273, the court stated:

“It would be intolerable if the operation of any business might be interfered with because some police officer came to the conclusion that the business was being operated in violation of the law. Such a condition would result in a government of men, not of law.”

In the case of *Dearborn Publishing Co. vs. Fitzgerald*, 271 Fed. 479, the Mayor and the Chief of Police of Cleveland, acting under color of an ordinance proscribing the sale of obscene and scandal-

ous literature, threatened agents of a publishing company with arrest if future editions of the newspaper were sold on the streets of Cleveland. In enjoining the city officials from continuing such threats, the court said:

“The publication complained of cannot by any stretch of the imagination be classified as indecent, obscene or scandalous, but if it were, the city’s power would be to conduct a prosecution for the specific offense thus committed, and not the establishment of a censorship in advance of future publications, and prohibition generally of the sale thereof upon the streets, in the same manner as other publications may be sold.”

The case of *American Mercury, Inc., vs. Chase*, 13 Fed. 2d 224, holds as follows:

“The injury to the persons affected does not flow from any judgment of a court or public body; it is caused by the defendant’s notice, which rests on the defendant’s judgment. The result on the other person is the same, whether that judgment be right or wrong, i.e., the sale of his magazine or book is seriously interfered with. [20] Few dealers in any trade will buy goods after notice that they will be prosecuted if they resell them. Reputable dealers do not care to take such a risk, even when they believe that prosecution would prove unfounded. The defendants know this and trade upon it. They secure their influence, not by voluntary acquiescence in their opinions by the trade in question, but by the

coercion and intimidation of that trade, through the fear of prosecution if the defendant's views are disregarded."

In discussing the American Mercury case, the United States District Court in the Northern District of Ohio, Eastern Division, in Civil Action No. 30167, entitled *The New American Library of World Literature, Inc., vs. Edward J. Allen, Jr.*, individually and as Chief of Police of the City of Youngstown, Ohio, et al., the court pointed out that while the American Mercury case involved no action of a public official, it shed light on the issues here presented for determination, in that where public officials exceed their lawful powers they can no longer act as duly authorized agents of government. The court further said that in such cases they act with no greater legal authority than private persons or private organizations as the defendant police officer in that action possessed no lawful power to suppress publications under threat of prosecution.

In *The New American Library of World Literature, Inc.*, case, *supra*, the court stated:

"Freedom of the press, together with freedom of speech and freedom of religion, occupy a 'preferred position' among our constitutional guarantees." Citing *Marsh vs. Alabama*, 326 U.S. 501, at 509 (1946); *Jones vs. Opelika*, 319 U.S. 103 (1943); *Murdock vs. Pennsylvania*, 319 U.S. 105 (1943); *Martin vs. Struthers*, 319 U.S. 141 (1943). The

court then goes on to say that, "That preferred position [21] gives these guarantees a 'sanctity and sanction not permitting dubious intrusions,' " citing Thomas vs. Collins, 323 U.S. 516, at 530.

Respectfully submitted,

ARTHUR J. CROWLEY and  
BEN LEVIN,

By /s/ ARTHUR J. CROWLEY,  
Attorneys for Plaintiff.

[Endorsed]: Filed June 13, 1957. [22]

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[Title of District Court and Cause.]

### AFFIDAVIT

State of New York,  
County of New York,  
City of New York—ss.

Benjamin E. Winston, being duly sworn, says:

1. Since 1930 affiant has been duly admitted to practice law in the State of New York, and since 1947 before the United States Supreme Court.

2. Affiant maintains law offices at 475 Fifth Avenue, New York City, and is general counsel for Publishers Distributing Corp., a New York Corporation. Since the inception of Confidential magazine in 1952, Publishers Distributing Corp. has been the national distributor thereof pursuant to contract with plaintiff.



3. On May 29, 1957, defendant, Clarence A. Linn, Assistant Attorney General of California (hereinafter called "Linn"), telephoned affiant from San Francisco, California. Affiant had previously conferred with Linn in New York City and had spoken by telephone with him in New York City and California. During the conversation, Linn stated that if Publishers Distributing Corp. distributed any further issues of Confidential magazines in California, he (Linn) would go before the Grand Jury and seek indictments [23] against California wholesalers who handled said magazine and, in addition thereto, Publishers Distributing Corp. and its officers, Linn further stated that, in his opinion, the material published in Confidential magazine was obscene and libelous and violated California law. Affiant told Linn he would report the message to Publishers Distributing Corp.'s president, Samuel Scheff.

4. Affiant promptly communicated Linn's threat to said Samuel Scheff and warned him that Linn's threat posed a serious problem to Publishers Distributing Corp.'s officers and California wholesalers.

5. Affiant is informed that Publishers Distributing Corp. thereupon notified plaintiff that because of Linn's said threat, Publishers Distributing Corp. would not distribute to its California wholesalers the September, 1957, and succeeding issues of Confidential magazine until the threat of criminal prose-



cution against the distributors of said magazine was removed.

/s/ BENJAMIN E. WINSTON.

Sworn to before me this 14th day of June, 1957.

/s/ ANNE MONTELEONE,

Notary Public, State of New  
York.

Receipt of copy acknowledged.

[Endorsed]: Filed June 17, 1957. [24]

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[Title of District Court and Cause.]

### MOTION TO DISMISS

The defendants move to dismiss this action because:

1. The complaint fails to state a claim against defendants, or either of them, upon which relief can be granted.

2. This action is in fact against the State of California and the individual defendants are the Attorney General of the State of California and the Assistant Attorney General of the State of California and are sued in their representative capacity; it appears from the body of the complaint that the matter involved is one in which the State of California is primarily concerned and therefore the action is essentially one against the State of California.

3. It is brought in the wrong district, the jurisdiction of this court being involved on the ground that the [26] action arises under the Constitution and laws of the United States in addition to the ground of diversity of citizenship of the parties, and the defendants are residents of the Northern District of California, all of which more clearly appears from the affidavit of Clarence A. Linn served and filed herewith.

/s/ EDMUND G. BROWN,  
Attorney General of the State  
of California;

/s/ CLARENCE A. LINN,  
Assistant Attorney General;

/s/ B. ABBOTT GOLDBERG,  
Deputy Attorney General,  
Attorneys for Defendants.

[Endorsed]: Filed June 17, 1957. [27]

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[Title of District Court and Cause.]

AFFIDAVIT IN OPPOSITION TO APPLICATION  
FOR INJUNCTION PENDENTE  
LITE AND IN SUPPORT OF MOTION TO  
DISMISS

State of California,  
County of Los Angeles—ss.

Clarence A. Linn, being first duly sworn, deposes and says: That he is an attorney at law, duly admitted to practice in all of the courts of the State

of California, and the federal courts located within the State of California.

That Edmund G. Brown is the duly elected, qualified and acting Attorney General of the State of California, and that affiant is a duly appointed, qualified and acting Assistant Attorney General of the State of California; that Edmund G. Brown and Clarence A. Linn are the defendants in the above-entitled [28] action and are residents of the Northern District of California and are not now and never have been residents of the Southern District of California. That Edmund G. Brown and Clarence A. Linn have stated all of the facts and circumstances in the above-entitled action to B. Abbott Goldberg, who is an attorney at law admitted to practice in the State of California, and after said statement of facts they have been advised and they do believe that they and each of them have a good and sufficient defense to the above-entitled action on the merits.

That the magazine published by plaintiff and referred to in its complaint has for some time been distributed and sold in the State of California in violation of the laws of the State of California forbidding the publication of lewd, obscene and libelous matter; that each and every issue of said magazine has been replete with filthy stories, vicious innuendo and cruel libel; that the matter in the magazine is such that it cannot be set out in this affidavit, but affiant is prepared to submit to the court copies of said magazine for its inspection.

That the acts of defendants complained of, if committed at all, were committed in the performance of the duties of defendants as quasi-judicial officials of the State of California and in response to requests of distributors of said magazine who desired to know if they would be violating the law if they distributed the current issue of said magazine.

That the defendants have never at any time censored or suppressed the publication or distribution of said magazine and do not intend to do so but defendants will after said magazine is published and distributed to wholesalers in the State of California examine said magazine if it is submitted to them and will advise those who inquire whether or not the distribution and sale of the magazine will violate the laws of the State of [29] California.

That prior to the time of any of the alleged threats defendants had submitted to the Grand Jury of Los Angeles County copies of said magazine and the facts surrounding the publication and distribution thereof and said Grand Jury did on the 15th day of May, 1957, return an indictment charging the plaintiff and a number of other persons and corporations with the crime of felony, to wit, conspiracy to publish, distribute and sell lewd, obscene and libelous matter.

That affiant makes this affidavit on behalf of himself and said Edmund G. Brown in support of a motion to dismiss said action and in opposition to the plaintiff's application for an injunction.

That the defendants propose to move for the dismissal of the above-entitled action on Monday, the 17th day of June, 1957, at the hour of 10:00 o'clock a.m. or as soon thereafter as counsel can be heard. That the above-entitled action was filed on June 11, 1957; that the papers in said action were served on the 13th day of June, 1957, and were not received by the defendants until the 14th day of June, 1957, at San Francisco, California. That defendants have requested of counsel a continuance of the hearing on the order to show cause heretofore issued herein but said request has been denied. That because of the shortness of time it has not been possible to sooner prepare and serve the moving papers in support of a motion to dismiss this action and to oppose the application for an injunction.

Wherefore, defendants pray that this court permit the papers in support of a motion to dismiss and in opposition [30] to the application for an injunction to be served and filed on the 17th day of June, 1957, and that the motion be heard forthwith.

/s/ CLARENCE A. LINN.

Subscribed and sworn to before me this 17th day of June, 1957.

[Seal]     /s/ MAUDE HONEYWILL,  
Notary Public in and for the County of Los Angeles, State of California.

[Endorsed]: Filed June 17, 1957. [31]



[Title of District Court and Cause.]

POINTS AND AUTHORITIES IN OPPOSITION TO APPLICATION FOR TEMPORARY RESTRAINING ORDER AND IN SUPPORT OF MOTION TO DISMISS

Facts

Plaintiff publishes in violation of law a magazine replete with the crudest filth and most odious libel.

Defendants as the Chief Law Officers of the State of California are charged with interfering with the illegal distribution of this magazine by merely announcing that those who break the law will be arrested.

Here we have State action by State officials enforcing constitutional statutes as is their sworn duty. [32]

Plaintiff asks damages for acts already performed and an injunction to prevent further law enforcement.

Plaintiff attempts to assert in a conglomeration of allegations two causes of action: (1) first, under the Civil Rights Statute (28 U.S.C., Sec. 1343), and (2) second, for tort in interfering with a contractual relationship.

The defendants are both residents of the Northern District of California and this action was instituted in the Southern District of California.



## Argument

## I.

As to Action Under 28 U.S.C., Section 1343:

As a matter of law, plaintiff has failed to state a cause of action under U.S.C., Title 28, Section 1343, as alleged in Counts I and VII of its complaint. Subsections 1 and 2 of that statute refer to "any act done in furtherance of any conspiracy mentioned in Section 1985 of Title 42," and plaintiff has failed to allege any conspiracy on the part of defendants. Furthermore, "the complaint clearly does not state a cause of action for a denial of equal protection," for which Section 1985 gives a cause of action. *Jennings v. Nestor*, 217 F. 2d 153 (1955).

With respect to Subsection 3, it is a settled rule of law that these defendants, acting in their official capacities are immune from civil liability under the Civil Rights Acts. *Cawley v. Warren*, 216 F. 2d 74 (1954); *Lyons v. Baker*, 163 F. 2d 838 (1950); *Kenney v. Hatfield*, 132 F. Supp. 814 (1955).

## II.

Interference With Contractual Relations:

As for the allegations of Count IX of the complaint, plaintiff has failed to state a cause of action, and has failed [33] to state grounds upon which a temporary injunction should issue.

With respect to plaintiff's claim for damages, on the theory of inducing breach of contract, the re-

statement of torts states the law as follows (Sec. 766) :

“Except as stated in Section 698, one who without a privilege to do, induces or otherwise purposely causes a third person not to

- (a) perform a contract with another, or
- (b) enter into or continue a business relation with another

is liable to the other for the harm caused thereby.”

Section 767 defines the test of privilege in terms of

- “(a) the nature of the actor’s conduct,
- (b) the nature of the expectancy with which his conduct interferes,
- (c) the relations between the parties,
- (d) the interest sought to be advanced by the actor, and
- (e) the social interests in protecting the expectancy on the one hand and the actor’s freedom of action on the other hand.”

In *Imperial Ice Co. v. Rossiter*, 18 Cal. 20, 33, 35, the court recognized the above in saying: “Thus, a person is justified in inducing the breach of a contract the enforcement of which would be injurious to health, safety or good morals.” As the complaint states (Count V), at the time of the acts complained of, a grand jury investigation of the plaintiff’s publication was pending in Los Angeles.\* Defend-

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\*In fact indictment had been returned on May 15, 1957.

ants were consequently acting in good faith in apprising plaintiff's [34] distributors of their possible criminal liability under the appropriate California statutes; indeed they were acting in performance of their duties as Chief Law Enforcement Officers of the State. The public interest demands no less. See *Gregoire v. Biddle*, 177 F. 2d 579 (1949).

With respect to plaintiff's motion for a temporary injunction, it is well accepted that the power to issue temporary injunctions is an extraordinary one and should be exercised with great caution, within the sound discretion of the trial court. Here plaintiff's alleged injury is in no way irreparable; monetary compensation would be adequate, and delay will not otherwise endanger plaintiff's rights. *Lagunitas Water Co. v. Marin County Water Co.*, 163 Cal. 332, 125 P. 351 (1912). And equity will not by injunction protest a business conducted for an illegal purpose or in violation of a criminal statute. *Downing v. State Board of Pharmacy*, 85 Cal. App. 2d 30, 192 P. 2d 39 (1948). For purposes of this motion, the material contained in the complaint must be taken as true, and plaintiff does not deny the truth of the assertions contained in the defendants' telegram, namely, that the plaintiff's publication contained illegal matter.

### III.

#### Wrong Jurisdiction

This action is pending in the Southern District of California. The defendants reside in the Northern

District of California. An action such as this one can only be brought in the district of the residence of the defendants (U.S.C., Title 28, Sec. 1391). [35]

Under the circumstances a motion to dismiss must be granted (Fed. Rules of Civil Procedure, Rule 12(b)).

The action should be dismissed.

/s/ EDMUND G. BROWN,  
Attorney General of the State  
of California;

/s/ CLARENCE A. LINN,  
Assistant Attorney General;

/s/ B. ABBOTT GOLDBERG,  
Deputy Attorney General,  
Attorneys for Defendants.

[Endorsed]: Filed June 17, 1957. [36]

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[Title of District Court and Cause.]

MEMORANDUM OF POINTS AND AUTHORITIES  
IN OPPOSITION TO MOTION TO  
DISMISS

I.

Transitory Action

The defendants contend that they reside in the Northern District of California and that thus this

action can only be brought in the Northern District. However, this action is transitory in its nature as its subject-matter is an injunction and damages against the defendants, and may, therefore, be brought in any District where the defendants are served with process. The defendants were served with process in the Southern District of California and, therefore, the action is properly brought in this District.

Stone vs. United States,  
167 U.S. 178.

“\* \* \* the gravamen of the action was the conversion of the lumber and railroad ties manufactured out of such trees, and a judgment was asked, not for the trespass, [37] but for the value of the personal property so converted by the defendant.”

“\* \* \* The action in its essential features related to personal property, was of a transitory nature, and could be brought in any jurisdiction in which the defendant could be found and served with process.”

Mauser vs. Union Pacific Railway Company,  
243 Fed. 274.

A transitory action follows the person and can be brought wherever the defendant can be found, whether the action is *ex delicto* or *ex contractu*.

Rackow vs. United Excavating Co.,  
67 Fed. Supp. 699 (1946).

The court in determining whether or not the cause of action was transitory or local in its nature, for the purpose of determining whether the action was brought in the proper District, held as follows: "It is conceded by the defendant that the general rule is that, where an action in its essential features is related to personal property, it is transitory and may be brought in any jurisdiction in which the defendant can be found and served with process."

Thus, this action was properly brought in the Southern District of California, where the defendants were served with process.

## II.

### Transfer of Action

Even if the transitory character of this action, set forth in Paragraph I above, were completely disregarded, defendants would be incorrect in their allegation that the "Motion to dismiss must be granted" under USC, Title 28, Section 1391, for they fail to [38] take into consideration USC, Title 28, Section 1406, which provides as follows:

"(a) The district court of a district in which is filed a case laying venue in the wrong division or district shall dismiss, or if it be in the interest of justice, transfer such case to any district or division in which it could have been brought."



Thus, if the court could hold that this action is not transitory and that it properly belongs in the Northern District of California, in the interest of justice the court may transfer the case to the Northern District instead of dismissing it. Certainly the interests of justice would be better served by a transfer, as a dismissal would only result in plaintiff being required to file the case anew and cause delay in determination of the matter on its merits.

Respectfully submitted,

ARTHUR J. CROWLEY and  
BEN LEVIN,

By /s/ ARTHUR J. CROWLEY,  
Attorneys for Plaintiff.

Affidavit of Service by Mail attached.

[Endorsed]: Filed June 20, 1957. [39]

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[Title of District Court and Cause.]

MINUTES OF THE COURT, JUNE 17, 1957

Present: Hon. Harry C. Westover, District Judge.

Counsel for Plaintiff: Arthur J. Crowley,  
Esq., and Ben Levin, Esq.

Counsel for Defendant: Clarence A. Linn,  
Esq., and Wm. V. O'Connor, Esq.

Proceedings:

Hearing on motion of the plaintiff (filed June 13, 1957) for Preliminary Injunction:

Counsel argue.

Court make a statement and denies plaintiff's motion for preliminary injunction, and further orders that defendants' motion to dismiss, presented and filed this day, be set for hearing at 10:00 a.m., July 1, 1957.

JOHN A. CHILDRESS,  
Clerk;

By /s/ MARY O. SMITH,  
Deputy Clerk. [41]

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[Title of District Court and Cause.]

NOTICE OF APPEAL

Notice Is Hereby Given that plaintiff, Confidential, Inc., hereby appeals to the U. S. Court of Appeals for the 9th Circuit from the order made and entered in this action on June 17, 1957, denying a preliminary injunction to restrain defendants, Edmund G. Brown and Clarence A. Linn, and all persons acting by, through, or under them, or either of them, or by or through their order, from declaring orally or in writing that "Confidential" magazine contains any matters which are lewd, obscene or libelous, or threatening the publisher, distributors, wholesalers or vendors of said magazine

with criminal prosecution or Grand Jury investigation for the distribution or sale of same.

ARTHUR J. CROWLEY and  
BEN LEVIN,

By /s/ ARTHUR J. CROWLEY,  
Attorneys for Plaintiff and  
Appellant.

Affidavit of Service by Mail attached.

[Endorsed]: Filed June 20, 1957. [42]

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[Title of District Court and Cause.]

### CERTIFICATE BY CLERK

I, John A. Childress, Clerk of the above-entitled Court, hereby certify that the items listed below constitute the transcript of record on appeal to the United States Court of Appeals for the Ninth Circuit, in the above-entitled cause;

Complaint;

Notice of Motion and Motion for Preliminary Injunction;

Affidavit of Arthur J. Crowley in Support of Motion for Preliminary Injunction;

Memorandum of Points and Authorities in Support of Temporary Restraining Order and Preliminary Injunction;

Affidavit of Benjamin E. Winston;

Motion to Dismiss;

Affidavit in Opposition to Application for Injunction Pendente Lite and in Support of Motion to Dismiss;

Points and Authorities in Opposition to Application for Temporary Restraining Order and in Support of Motion to Dismiss;

Memorandum of Points and Authorities in Opposition to Motion to Dismiss;

Minutes of the Court for June 17, 1957;

Notice of Appeal;

Designation of Record on Appeal;

I further certify that my fee for preparing the foregoing record, amounting to \$1.60, has been paid by appellant.

Witness my hand and seal of the said District Court this 26th day of June, 1957.

JOHN A. CHILDRESS,

Clerk;

/s/ CHARLES E. JONES,

Deputy.

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[Endorsed]: No. 15634. United States Court of Appeals for the Ninth Circuit. Confidential, Inc., a Corporation, Appellant, vs. Edmund G. Brown, Attorney General, State of California, et al., Appellees. Transcript of Record. Appeal from the United States District Court for the Southern District of California, Central Division.

Filed June 27, 1957,

Docketed July 20, 1957.

/s/ PAUL P. O'BRIEN,

Clerk of the United States Court of Appeals for  
for the Ninth Circuit.

United States Court of Appeals  
for the Ninth Circuit

No. 725-57 HW

CONFIDENTIAL, INC., a New York Corporation,  
Plaintiff and Appellant,

vs.

EDMUND G. BROWN and CLARENCE A.  
LINN,  
Defendants and Appellees.

APPELLANT'S POINTS ON APPEAL AND  
DESIGNATION OF RECORD

I.

The following constitutes a statement of the points on which Appellant relies:

(1) That the Defendants and Appellees, Edmund G. Brown and Clarence A. Linn, hereinafter referred to as Defendants, at all times herein concerned were and are respectively the Attorney General and Assistant Attorney General of the State of California.

(2) That the Plaintiff and Appellant, hereinafter referred to as Plaintiff, at all times herein concerned was and is engaged in the publication of a magazine entitled "Confidential," which magazine is distributed throughout the State of California and the United States.

(3) That defendants, under color of their offices as Attorney General and Assistant Attorney General of California, precensored, restrained and suppressed the distribution and sale in California of the issue of "Confidential" magazine which was scheduled for sale in June, 1957, and all future issues of said magazine, by declaring to the national distributor and to all California wholesalers of the magazine that in the opinion of Defendants said magazine contains lewd, obscene and libelous matter and threatening that any sale or offer for sale of any future issues of said magazine will result in the Defendants obtaining criminal prosecution against them. That Defendants threaten to continue their said course of conduct as to all future issues of said magazine.

(4) That said acts of Defendants are unlawful in that they are in violation of the plaintiff's right of free press as safeguarded by the Fourteenth Amendment to the United States Constitution.

(5) That said acts of Defendants were and are outside the scope of their authority and power as Attorney General and Assistant Attorney General of California and thus Defendants are not immune from civil suit.

(6) That said acts of Defendants constitute a wilful and unprivileged interference with the contract between plaintiff and Publishers Distributing Corp., the national distributor of said magazine, resulting in damage to plaintiff in certain ascer-



tained sums, together with other and irreparable damage.

(7) That preliminary and permanent injunctions should issue against Defendants pursuing said course of conduct.

## II.

Appellant designates the entire record of the District Court as material to the consideration of this appeal.

Dated: July 23, 1957.

ARTHUR J. CROWLEY and  
BEN LEVIN,

By /s/ BEN LEVIN,  
Attorneys for Plaintiff.

Affidavit of service by mail attached.

[Endorsed]: Filed July 23, 1957.

No. 15634

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United States  
Court of Appeals  
for the Ninth Circuit

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CONFIDENTIAL, INC., a Corporation,

Appellant,

vs.

EDMUND G. BROWN, Attorney General, State of  
California, et al.,

Appellees.

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Supplemental  
Transcript of Record

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Appeal from the United States District Court for the  
Southern District of California  
Central Division.

FILE

AUG 16 1957

PAUL P. O'BRIEN, C



No. 15634

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**United States  
Court of Appeals**  
for the Ninth Circuit

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**CONFIDENTIAL, INC., a Corporation,**  
**Appellant,**  
**vs.**

**EDMUND G. BROWN, Attorney General, State of  
California, et al.,**  
**Appellees.**

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**Supplemental  
Transcript of Record**

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**Appeal from the United States District Court for the  
Southern District of California  
Central Division.**

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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

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United States District Court in and for the Southern District of California, Central Division

No. 725-57—HW

CONFIDENTIAL, INC., a New York Corporation,  
Plaintiff,

vs.

EDMUND G. BROWN and CLARENCE A. LINN,  
Defendants.

FINDINGS OF FACT AND CONCLUSIONS OF  
LAW ON DENIAL OF PRELIMINARY IN-  
JUNCTION

This cause came on for hearing on June 17, 1957, on the plaintiff's motion for a preliminary injunction and the court having considered the verified complaint and affidavits of the plaintiff and the affidavit presented by the defendants finds the facts and states the conclusions of law as follows:

Findings of Fact

I.

(a) That it is true that at all times mentioned in the complaint in this action the defendants Edmund G. Brown and Clarence A. Linn were and now are respectively the Attorney General and Assistant Attorney General of the State of California.

(b) That on May 15, 1957, the Grand Jury of the County of Los Angeles returned an indictment

charging Confidential, Inc., Whisper, Inc., Publishers Distributing Corporation, and others with the commission of a felony, to wit, conspiracy to violate the laws of the State of California forbidding publication of lewd, obscene and/or libelous matter.

## II.

That it is not true that on or about May 29, 1957, the defendants Edmund G. Brown and Clarence A. Linn caused to be published in a newspaper of general circulation in the State of California a statement to the effect that the Attorney General's office will ban the distribution of "Confidential" magazine commencing with the issue due for distribution on June 20, 1957.

## III.

That it is true that on or about May 29, 1957, defendant Clarence A. Linn with the consent and authority of defendant Edmund G. Brown, communicated with Publishers Distributing Corporation of New York, the California distributor of "Confidential" magazine, and alleged that he was the Assistant Attorney General of California and that "Confidential" magazine contained libelous and obscene matter which violated California Statutes and that said distributing company and its officers would be criminally prosecuted if the magazine was thereafter placed for sale in California.

## IV.

That it is true said distributor refuses and does still refuse to distribute or place said magazine for sale in the State of California.

## V.

That the plaintiff has failed to establish any probable right which may be defeated if the preliminary injunction is not issued.

## VI.

That the court has taken judicial notice of the public interest in allowing the defendants to proceed to enforce the laws of the State of California and finds that the authority asserted by the defendants to execute laws of the State of California is an authority in which the public has a vital interest, which interest might be defeated if the preliminary injunction prayed for were granted.

## Conclusions of Law

## I.

That the defendants Edmund G. Brown and Clarence A. Linn acted within the scope of their authority as Attorney General and Assistant Attorney General of the State of California, respectively, and pursuant to the laws and Constitution of the State of California, and the Constitution of the United States, in declaring that "Confidential" magazine contains lewd, obscene and libelous matter, and in threatening the publisher, distributor, wholesalers and vendors of said magazine with criminal prosecution or Grand Jury investigation if they distribute or sell same in the State of California.

## II.

That a preliminary injunction shall not issue for the purpose of restraining the defendants Edmund

G. Brown and Clarence A. Linn from declaring as Attorney General and Assistant Attorney General of the State of California that "Confidential" magazine has contained matter which is lewd, obscene and libelous, and threatening the publisher, distributor, wholesalers and vendors of said magazine with criminal prosecution or Grand Jury investigation if they distribute or sell same in the State of California, copies of said magazine which contain lewd, obscene and libelous matter.

Dated: July 8th, 1957.

/s/ HARRY C. WESTOVER,  
United States District Judge.

[Endorsed]: Filed July 8, 1957.

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United States District Court in and for the Southern District of California, Central Division

No. 725-57—HW

CONFIDENTIAL, INC., a New York Corporation,  
Plaintiff,

vs.

EDMUND G. BROWN and CLARENCE A. LINN,  
Defendants.

ORDER GRANTING MOTION  
TO DISMISS

The Motion to Dismiss the above-entitled action duly came on for hearing on the 8th day of July, 1957.

The Court having heard arguments of counsel for the respective parties and having determined that the defendants, Edmund G. Brown and Clarence A. Linn, acted within the scope of their powers as Attorney General and Assistant Attorney General of the State of California, respectively, in all acts and matters set forth in the Complaint on file herein and are, therefore, immune from civil suit relating to such acts and matters.

It Is Ordered that plaintiff's action be and the same is hereby dismissed for failure to state a claim upon which relief can be granted.

Dated: July 11th, 1957.

/s/ HARRY C. WESTOVER,  
United States District Judge.

Approved as to form:

.....,  
Attorneys for Defendants.

Affidavit of service by mail attached.

Lodged July 10, 1957.

[Endorsed]: Filed July 11, 1957.

Entered July 12, 1957.



[Title of District Court and Cause.]

No. 725-57—HW

NOTICE OF APPEAL TO CIRCUIT  
COURT OF APPEALS

Rule 73(b) and USC Title 28, Section 1292

Notice Is Hereby Given that plaintiff, Confidential, Inc., hereby appeals to the Circuit Court of Appeals for the 9th Circuit from the order made in this action denying the preliminary injunction, which order was entered in the docket on July 9, 1957, and from the order and judgment dismissing this action which was entered on the docket on July 12, 1957.

ARTHUR J. CROWLEY and  
BEN LEVIN,

By /s/ ARTHUR J. CROWLEY,  
Attorneys for Plaintiff and  
Appellant.

Affidavit of service by mail attached.

[Endorsed]: Filed July 15, 1957.

15639

No. ~~15,389~~

IN THE

United States Court of Appeals  
For the Ninth Circuit

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RICHARD G. RISER,

*Appellant,*

VS.

HARLEY O. TEETS, Warden of the California State Prison at San Quentin,

*Appellee.*

On Appeal from the United States District Court for the  
Northern District of California,  
Southern Division.

Honorable Edward P. Murphy, District Judge.

APPELLEE'S BRIEF.

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EDMUND G. BROWN,

Attorney General of the State of California,

CLARENCE A. LINN,

Assistant Attorney General of the State of California,

ARLO E. SMITH,

Deputy Attorney General of the State of California,

600 State Building, San Francisco 2, California,

*Attorneys for Appellee.*



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No. 15,369

IN THE

**United States Court of Appeals  
For the Ninth Circuit**

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RICHARD G. RISER,

*Appellant,*

VS.

HARLEY O. TEETS, Warden of the California State Prison at San Quentin,

*Appellee.*

**On Appeal from the United States District Court for the  
Northern District of California,  
Southern Division.**

**Honorable Edward P. Murphy, District Judge.**

**APPELLEE'S BRIEF.**

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**STATEMENT OF THE CASE.**

On April 15, 1957, appellant filed a petition for writ of habeas corpus in the United States District Court (see CT 52). An order to show cause was issued on April 15, 1957 (CT 53).

On April 17, 1957, the District Court issued an order staying execution (CT 63-65), and on the following day, April 18, 1957, amended the order staying execution (CT 64).



On May 7, 1957, the District Court discharged the order to show cause and denied the petition for writ of habeas corpus (CT 86).

On June 20, 1957, the U. S. District Court issued a stay of execution until the final disposition of the appeal in this matter (CT 89). On June 24, 1957, the District Court granted a certificate of probable cause for appeal from its order denying the petition for writ of habeas corpus, and likewise issued an order granting permission to pursue the appeal in *forma pauperis* (CT 91-92).

On June 25, 1957, the notice of appeal was filed with the Clerk (CT 93).

#### **Sufficiency of Notice of Appeal.**

It will be noted from the statement of the case, that the order denying the petition for writ of habeas corpus and discharging the order to show cause was filed on May 7, 1957, and that the transcript on appeal reflects that the notice of appeal was filed on June 25, 1957. Thus, on the face of the record, it appears that the notice of appeal was filed beyond the 30 days provided for the filing of a notice of appeal under the Federal Rules of Civil Procedure (Rule 72).

However, it should be noted that inquiry into this matter has been made by the appellee and appellee is satisfied from his own files and from discussion of the matter with appellant's counsel, that the notice of appeal was placed in the hands of the Clerk prior to the expiration of the 30 days. Appellee assumes

appellant will clarify this matter further by affidavit or otherwise, to the satisfaction of the Court. Thus appellee will not pursue the contention that the notice of appeal was not timely.

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### STATEMENT OF FACTS.

Appellant was convicted in the Superior Court of the State of California, in and for the County of Stanislaus, on two counts of murder. The jury returned verdicts of guilty of murder in the first degree. Thereupon judgments and sentences of death were entered by the Court.

The automatic appeal was taken to the California Supreme Court. In that appeal appellant contended that his pre-trial motions to be furnished with a copy of the fingerprint taken from a bottle and for permission to inspect statements made by two witnesses were erroneously denied. Petitioner also contended that the Court erred in granting a motion to vacate a *subpoena duces tecum* which sought statements given by the witness Burgess. This subpoena was sought after the witness, Burgess, had testified for the prosecution and was based on affidavits that the statements were material and were contradictory to the witness' testimony at the trial.

The California Supreme Court affirmed the judgment and held that the error of the Court in granting the motion to vacate the subpoena was error, but not prejudicial. See *People v. Riser*, 47 Cal. 2d 566.

### **SUMMARY OF APPELLANT'S CONTENTIONS.**

1. Appellant was denied due process of law when the Superior Court denied his motions for the production of statements of witnesses and copies of fingerprints prior to trial.

2. When the Superior Court denied the appellant the right to examine written statements made by a witness for the prosecution, after the witness was called and testified for the prosecution, the Superior Court violated appellant's right of cross-examination, the production of evidence and the essentials of a fair trial, in violation of due process of law.

3. Appellant was denied equal protection of the law by the California Supreme Court as a result of its unequal application of the reversible error rule as applied to the admitted error of the trial Court by its failure to require the prosecution to produce the written statements of the witness after the witness had testified.

---

### **SUMMARY OF APPELLEE'S ARGUMENT.**

I. Pre-trial access to confidential police records is not a common law right; the denial of such access prior to and during the trial is not a violation of due process of law.

II. A denial of equal protection of the law by an Appellate Court is not sufficiently alleged by the mere allegation that the Appellate Court applied the prejudicial error rule "unequally"; the California Supreme Court applied the prejudicial error rule

correctly and without discrimination in the case of *People v. Riser*.

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## ARGUMENT.

### I.

**PRE-TRIAL ACCESS TO CONFIDENTIAL POLICE RECORDS IS NOT A COMMON LAW RIGHT; THE DENIAL OF SUCH ACCESS PRIOR TO AND DURING THE TRIAL IS NOT A VIOLATION OF DUE PROCESS OF LAW.**

The appellant contends that he was denied due process of law by the California trial Court on the ground that he was denied access to written statements and other evidence in the possession of the prosecution.

This broad contention is divided into two separate parts: first, that he was unconstitutionally denied pre-trial access to statements and records in the possession of the prosecution; and secondly, appellant claims that he was denied due process when he was denied access to statements of a witness in the possession of the prosecution, after the witness had testified for the prosecution.

Specifically, appellant contends that he was denied due process when the trial Court denied his order directing the prosecution to furnish him with a copy of the fingerprint taken at the scene of the crime, and to allow him to inspect statements made to the police by two witnesses. This contention has been dealt with at length in many current cases and statutes. The rule at common law was clearly established; an accused could not compel production of documents or other

evidence in the possession of the prosecution. See 6 Wigmore, Evidence, 3rd ed., 1940 (475-6). This rule has been followed by numerous decisions throughout the United States.

The decisions in *State v. Tune*, 98 Atl. 2d 881 (N. J. 1953), and *U. S. v. Garsson*, 291 Fed. 646, D. C. S. D. N. Y. (1923), contain excellent statements in support of the common law rule. In *State v. Tune*, *supra*, at 884, the Court stated as follows:

“However, such liberal fact-finding procedures are not to be used blindly where the result would be to defeat the ends of justice. In criminal proceedings long experience has taught the courts that often discovery will lead not to honest fact-finding, but on the contrary to perjury and the suppression of evidence. Thus the criminal who is aware of the whole case against him will often procure perjured testimony in order to set up a false defense, *State v. Rhoads*, 81 Ohio St. 397, 423-424, 91 N. E. 186, 192, 27 L.R.A., N.S. 558 (Sup. Ct. 1910); *Commonwealth v. Mead*, 12 Gray 167, 170 (Mass. 1858). Another result of full discovery would be that the criminal defendant who is informed of the names of all of the State’s witnesses may take steps to bribe or frighten them into giving perjured testimony or into absenting themselves so that they are unavailable to testify. Moreover, many witnesses, if they know that the defendant will have knowledge of their names prior to trial, will be reluctant to come forward with information during the investigation of the crime, *People v. DiCarlo*, 161 Misc. 484, 485-486, 292 N.Y.S. 252, 254 (Sup. Ct. 1936). All these dangers are more inherent in criminal



proceedings where the defendant has much more at stake, often his life, than in civil proceedings. The presence of perjury in criminal proceedings today is extensive despite the efforts of the courts to eradicate it and constitutes a very serious threat to the administration of criminal justice and thus to the welfare of the country as a whole. (citation) To permit unqualified disclosure of all statements and information in the hands of the State would go far beyond what is required in civil cases; it would defeat the very ends of justice.

“In considering the problem it must be remembered that in view of the defendant’s constitutional and statutory protections against self-incrimination, the State has no right whatsoever to demand an inspection of any of his documents or to take his deposition or to submit interrogatories to him.

“ . . .

“ . . . the State is completely at the mercy of the defendant who can produce surprise evidence at the trial, can take the stand or not as he wishes, and generally can introduce any sort of unforeseeable evidence he desires in his own defense. To allow him to discover the prosecutor’s whole case against him would be to make the prosecutor’s task almost insurmountable.”

Likewise Judge Learned Hand, in *U. S. v. Garsson, supra*, stated as follows:

“ . . . Under our criminal procedure the accused has every advantage. While the prosecution is held rigidly to the charge, he need not disclose the



barest outline of his defense. He is immune from question . . . ; he cannot be convicted when there is the least fair doubt in the minds of anyone of the twelve. Why in addition he should in advance have the whole evidence to pick over at his leisure, and make his defense, fairly or foully, I have never been able to see. No doubt grand juries err and indictments are calamities to honest men, but we must work with human beings and we can correct such errors only at too large a price. Our dangers do not lie in too little tenderness to the accused. Our procedure has always been haunted by the ghost of the innocent man convicted. It is an unreal dream. What we need to fear is the archaic formalism and the watery sentiment that obstructs, delays and defeats the prosecution of crime."

Furthermore, Congress has recently reaffirmed the common law rule as applied to federal courts. Public Law 269, 85th Congress 71 Stat. 594, added section 3500 to Title 18 of the U. S. Code. This section provides in part as follows:

"(a) In any criminal prosecution brought by the United States, no statement or report in the possession of the United States which was made by a Government witness or prospective Government witness (other than the defendant) to an agent of the Government shall be the subject of subpoena, discovery, or inspection until said witness has testified on direct examination in the trial of the case."

Certainly, if due process is measured in terms of the Anglo-American concepts of fairness, by historical

practice, and the collected wisdom of common law jurisdictions, then denial of pre-trial discovery in a criminal case is not a violation of due process. Such was the rule at common law, such is currently the rule in the overwhelming majority of states, and such is the rule currently reaffirmed by Congress. Thus, certainly the denial of pre-trial discovery to the defendant was not a violation of due process of law.

Appellant likewise contends that the trial Court's granting of the motion to vacate the subpoena which sought to bring into Court the statement given by the witness Burgess to the police, was a violation of due process. These statements were sought for the purpose of impeaching the witness and were based on an affidavit that the witness had given a contradictory statement to the police. On the stand the witness Burgess denied making prior inconsistent statements. This, however, is not properly a question of the limitation of cross-examination, since the witness was cross-examined concerning said statements and denied having made them. Appellant, however, perhaps would have been able to lay a foundation to impeach the witness, and in fact impeach the witness, by the writings or by the testimony of the officers to whom the statements were given. The California Supreme Court held that the denial by the trial Court of access to these statements was error, however, not prejudicial error. See *People v. Riser*, 47 Cal. 2d 566 at 584-589.

The standard of due process of law being one of "essential fairness" is not violated by the Court's failure to order production of the statements of the

witness Burgess. Indeed, apparently at common law, no such right existed in the defendant. Likewise, there exists authority contrary to the California rule. See *State v. Rhoads*, 91 N. E. 186 (Ohio, 1910.) Likewise, such appeared to be the rule in Federal cases in recent years. See *Little v. U. S.*, 93 Fed. 2d 401, cert. den. 303 U. S. 644.

Furthermore, those jurisdictions following the rule adopted by California in the case of *People v. Riser*, do not treat the rule as one of due process, but rather of prejudicial error. Indeed, the United States Supreme Court in the adoption of the rule requiring the production of statements of a witness for the prosecution after the witness has testified for the prosecution, has treated it as a rule of prejudicial error. In the case of *Gordon v. U. S.*, 344 U. S. 414, the Court dealt at length with the problem of the prejudicial nature of the ruling. Indeed, in the *Gordon* case, *supra*, the Court stressed the fact that additional error existed other than the failure of the Court to require the Government to produce the statements of the witness for the purposes of possible impeachment after the witness had testified. The Court in this case stated, in 344 U. S. 414 at 422, as follows:

“We believe, moreover, that the combination of these two errors was sufficiently prejudicial to require reversal. . . . Reversals should not be based on trivial, theoretical and harmless rulings. But we cannot say that these errors were unlikely to have influenced the jury’s verdict. We believe they prejudiced substantial rights and the judgment must be *Reversed*.”

Furthermore, the decision in *Jencks v. U.S.*, 77 S. Ct. 1007, does not purport to adopt a rule of due process. At no point in that case is the problem discussed as one of due process of law. Indeed, the language indicates that it is purely a rule applicable to Federal Courts. The Court in the *Jencks* decision, *supra*, at 1013, clearly indicates that this is a rule for the administration of criminal justice in Federal Courts. Furthermore, the rule of the *Jencks* case to the extent that it requires the Government to release all statements of a witness for the Government after the witness has testified, has been modified by Congress. See Public Law 269, 85th Congress, First Session, 71 Stat. 595. Thus, the rule adopted by California in the case of *People v. Riser*, which requires the prosecution to produce statements after a witness has testified for the prosecution, is not a requirement of due process of law. Any incorrect application of this rule is mere error, and the State Court could, and should, determine whether or not said error was prejudicial.

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## II.

**A DENIAL OF EQUAL PROTECTION OF THE LAW BY AN APPELLATE COURT IS NOT SUFFICIENTLY ALLEGED BY THE MERE ALLEGATION THAT THE APPELLATE COURT APPLIED THE PREJUDICIAL ERROR RULE "UNEQUALLY"; THE CALIFORNIA SUPREME COURT APPLIED THE PREJUDICIAL ERROR RULE CORRECTLY AND WITHOUT DISCRIMINATION IN THE CASE OF PEOPLE v. RISER.**

The appellant contends that he was denied equal protection of the law in violation of the 14th Amend-



ment, because the California Supreme Court did not apply the rule of prejudicial error equally. Appellant contends that the California Supreme Court affirmed the judgment in his case, after admitting that the failure to require the prosecution to produce the statements of the witness Burgess after the witness had testified for the prosecution, was error, whereas in the case of *People v. Carter*, 48 A. C. 754 the California Supreme Court determined a similar error was prejudicial error.

There are three answers to this contention. First, this matter was not raised in the State Court, therefore the State remedies have not been exhausted. Secondly, the allegation does not state a Federal question. Thirdly, the California Supreme Court did not discriminate in the application of the prejudicial error rule as between the *Carter* case and the *Riser* case, or between the *Riser* case and any other case.

The novel contention advanced by the appellant that he was denied equal protection of law by the unequal application of the prejudicial error rule is not properly before this Court, since said contention has not been made in the California Supreme Court. This contention was not made on petition for rehearing or in any subsequent petition for writ of habeas corpus filed in that Court. Thus appellant has not exhausted his State remedies within the meaning of the provisions of 28 U. S. C. 2254.

Appellant has not stated a sufficient Federal question in his allegation concerning the denial of equal

protection of the law. No substantial Federal question is presented by the mere allegation that a State Appellate Court has applied the prejudicial error rule unequally. The application of such rule is of necessity a matter peculiar to each case and dependent upon the facts of each case. In the *absence of fraud and collusion* on the part of the Appellate Court in the application of the prejudicial error rule, no denial of equal protection has been alleged. Furthermore, Appellate Courts frequently determine that a matter is prejudicial error after numerous prior rulings that the matter was non-prejudicial error. Such a situation only indicates that the law of the State involved has been changed.

Furthermore, there was no showing in the Court below, and there is no showing here, that the California Supreme Court has applied the prejudicial error rule unequally. Appellant specifically points to the case of *People v. Carter*, 48 A. C. 754 to establish the denial of equal protection of the prejudicial error rule. The simple answer to this proposition is that in the case of *People v. Carter, supra*, the Court pointed to several errors in addition to the error of the Court in refusing to permit the defendant to inspect statements given the prosecution by a witness for the prosecution. The Court pointed to errors in instructions, as well as errors in the introduction and exclusion of evidence, the cumulative effect of which was a "miscarriage of justice" within the meaning of Article IV, Section 41½ of the California Constitution.



**CONCLUSION.**

It is respectfully submitted that the decisions in this matter be affirmed.

Dated, San Francisco, California.

November 12, 1957.

EDMUND G. BROWN,

Attorney General of the State of California,

CLARENCE A. LINN,

Assistant Attorney General of the State of California,

ARLO E. SMITH,

Deputy Attorney General of the State of California,

*Attorneys for Appellee.*

No. 15640

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**United States**  
**Court of Appeals**  
for the Ninth Circuit

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*See Vol. 3049*

JOHN PHILLIP ZANNARAS, J. P. ROBIN-  
SON, JR., and U. S. TUNGSTEN CORPORA-  
TION,

Appellants,

vs.

BAGDAD COPPER CORPORATION, a Corpora-  
tion,

Appellee.

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**Transcript of Record**  
In Two Volumes

Volume I  
(Pages 1 to 326)

**FILED**

DEC 3, 1957

**PAUL P. GIBBEN, CLERK**

**Appeal from the United States District Court for the  
District of Arizona**



No. 15640

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**United States  
Court of Appeals**  
for the Ninth Circuit

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JOHN PHILLIP ZANNARAS, J. P. ROBIN-  
SON, JR., and U. S. TUNGSTEN CORPORA-  
TION,

Appellants,

VS.

BAGDAD COPPER CORPORATION, a Corpora-  
tion,

Appellee.

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**Transcript of Record**  
In Two Volumes

**Volume I**  
**(Pages 1 to 326)**

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**Appeal from the United States District Court for the  
District of Arizona**



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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

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In the District Court of the United States  
in and for the District of Arizona

No. Civil 221 Pret.

JOHN PHILLIP ZANNARAS and J. P. ROBIN-  
SON, JR.,

Plaintiffs,

vs.

BAGDAD COPPER CORPORATION, a Corpora-  
tion,

Defendant.

### COMPLAINT

Plaintiffs for cause of action against defendant  
allege:

#### I.

Plaintiffs are residents of and the cause of action  
herein sued upon arose in the State of Arizona;  
defendant, Bagdad Copper Corporation, is a corpo-  
ration organized and existing under the laws of the  
State of Delaware authorized to and doing business  
in the State of Arizona.

#### II.

That heretofore on or about the 27th day of  
August, 1940, plaintiff, John Phillip Zannaras, ap-  
plied to the Water Commissioner of the State of  
Arizona, Arizona State Land Commission, for the  
right to appropriate and use the water of Burro  
Creek, a tributary of the Williams River, for mining  
purposes, and thereafter said Water Commissioner  
granted and confirmed to said plaintiff the right to

appropriate and use water from Burro Creek in an amount actually beneficially used for mining purposes not exceeding three million gallons per annum with the priority for such use dating from August 27, 1940; that since said 27th day of August, 1940, said plaintiff has continuously used water from Burro Creek for mining purposes until approximately June 28, 1948, as hereinafter set forth.

### III.

That on or about November 5, 1941, defendant, a corporation, made application with the said Water Commissioner of the State of Arizona for a permit to appropriate public water for mining purposes from Boulder Creek, a tributary of Burro Creek, and from Burro Creek; thereafter on or about the 2nd day of January, 1942, the said Water Commissioner granted to defendant the right to appropriate and use waters from the said Boulder Creek, a tributary of Burro Creek, and from Burro Creek, in an amount not to exceed three hundred fifteen million gallons per annum with a priority dated from November 5, 1941; that defendant has installed electric driven centrifugal pumps for the diversion of water from the said Boulder Creek, a tributary of said Burro Creek, and from the said Burro Creek, and defendant is and has been diverting water from said sources, at points approximately seven miles above plaintiff's point of diversion; that beginning on or about the 28th day of June, 1948, defendant wrongfully and without regard to the rights of plaintiff diverted substan-

tially all of the water from the said Boulder Creek and Burro Creek, and since that time has failed, neglected and refused and does now fail, neglect and refuse to allow sufficient water to pass defendant's points of diversion as above so as to allow the amount of water appropriated by plaintiff, John Phillip Zannaras, as above set forth, to reach said plaintiffs' point of diversion of the water which said plaintiff has appropriated as above set forth, and for which he has prior rights under the laws of the State of Arizona.

#### IV.

That plaintiff, John Phillip Zannaras, is the owner of a mill on a millsite situated near the intersection of Bonanza Wash and Burro Creek, which mill is used by plaintiffs to work the ore from the Zannapolis claims as recorded in the office of the County Recorder of Yavapai County, Arizona; that plaintiff, J. P. Robinson, Jr., is a mining partner with the said John Phillip Zannaras in the mining of said claims and in the operation of said mill;

That said water so appropriated by the said Zannaras is necessary for the operation of said mill and said mill cannot be operated without said water; that plaintiffs are informed and believe that if defendant did not wrongfully divert and withhold water as aforesaid, plaintiffs would have sufficient water from Burro Creek to operate said mill.

That plaintiffs are informed and believe that as the result of the wrongful acts of defendant of

diverting and withholding waters as aforesaid, plaintiffs have been since the 28th day of June, 1948, to the date hereof and will in the future be damaged in the sum of Fifteen Hundred (\$1,500) Dollars per day for loss of profits.

That plaintiffs are informed and believe, and therefore, allege that there is no adequate or speedy remedy at law to compensate plaintiffs for the wrongful diversion and withholding of said water by defendant from plaintiffs, and that unless this Court should issue its Mandatory Injunction requiring defendant to release said water to plaintiffs and restraining and enjoining defendant from further diverting and using water rights that belong to plaintiff, that defendant will continue to so divert and use said water and deprive plaintiffs of plaintiffs' rights therein and thereto.

Wherefore plaintiffs pray that the Court make and enter its order requiring defendant to appear at a time and place certain and show cause if any it has why the court should not enter its order, enjoining and restraining defendant from the use of any water from Boulder Creek, a tributary of Burro Creek, or Burro Creek which will interfere with the use and enjoyment by plaintiffs of plaintiffs' prior rights.

Plaintiffs further pray that the Court enter its Mandatory Injunction requiring defendant to allow sufficient water to pass defendant's point of diversion so as to allow plaintiffs to have the full use

and enjoyment of plaintiffs' prior water rights and enjoining and restraining defendant from interfering therewith.

Plaintiffs further pray for damages against defendant in the sum of Fifteen Hundred (\$1,500) Dollars per day from June 28, 1948, until such time as defendant shall cease its interference with plaintiffs' water rights, together with costs of Court, together with such other further or different relief as the Court may deem meet, just and proper in the premises.

/s/ J. P. ZANNARAS.

COX, LOCKWOOD &  
LOCKWOOD,

By /s/ SIMPSON COX,  
Attorneys for Plaintiffs.

Duly Verified.

[Endorsed]: Filed July 12, 1948.

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[Title of District Court and Cause.]

ANSWER

Comes Now Defendant and for its answer to the complaint of Plaintiffs alleges:

I.

That it admits the allegations of paragraph I of said complaint.



## II.

Answering paragraph II of said complaint, Defendant alleges it is without knowledge or information sufficient to form a belief as to the matters and things therein set forth, except that Defendant denies that Plaintiffs herein had continuously used water from Burro Creek for mining purposes since the 27th day of August, 1947.

## III.

Answering paragraph III of said complaint, defendant admits that it has certain water rights in and to the waters of Boulder Creek and Burro Creek, and admits that it has been using said waters in its mining operations; that defendant denies each and every, all and singular, the allegations of paragraph III except as admitted herein.

## IV.

Answering paragraph IV of said complaint, defendant is without knowledge or information sufficient to form a belief as to the allegations thereof, except that defendant denies that it has wrongfully diverted any water from plaintiffs and denies that said operation of plaintiffs as described therein is a profitable one; and denies that plaintiffs have suffered any damage through wrongful acts of plaintiff.

Wherefore, having fully answered said complaint, defendant prays that plaintiffs take nothing thereby and that defendant have and recover its costs for

this cause expended, and for such other and further relief as may be proper in the premises.

SNELL, WILMER, WALSH &  
MELCZER,

By /s/ MARK WILMER,  
Attorneys for Defendant.

Receipt of Copy acknowledged.

[Endorsed]: Filed October 1, 1948.

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[Title of District Court and Cause.]

MOTION FOR LEAVE TO  
AMEND COMPLAINT

To: The Honorable District Court of the United  
States in and for the District of Arizona:

Comes now plaintiffs herein and move for leave to amend the complaint heretofore filed herein by substituting for Paragraph I in said complaint the following:

“That plaintiffs were at the time of the filing of the complaint herein and ever since have been and now are citizens of the State of Arizona and the United States of America, and the cause of action herein sued upon arose in the State of Arizona; that defendant, Bagdad Copper Corporation, is a corporation organized and existing under the laws of the State of Delaware and authorized to and doing business in the State of Arizona.”

Said motion is based on the fact that the original complaint does not sufficiently allege the diversity of citizenship of the parties, although such diversification does actually exist and justice requires that the motion be granted.

COX, LOCKWOOD &  
LOCKWOOD,

By /s/ LORNA E. LOCKWOOD,  
Attorneys for Plaintiffs.

Receipt of Copy acknowledged.

[Endorsed]: Filed October 18, 1948.

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In the District Court of the United States  
in and for the District of Arizona

No. Civ. 221-Prescott

JOHN PHILLIP ZANNARAS and J. P. ROBIN-  
SON, JR.,

Plaintiffs,

vs.

BAGDAD COPPER CORPORATION, a Corpora-  
tion,

Defendant.

FINDINGS OF FACT, CONCLUSIONS  
OF LAW, AND JUDGMENT

This matter having been heretofore tried and submitted to the court for determination and find-

ings of fact and conclusions of law having been heretofore submitted to the court and the court understanding the matter, the following findings of fact and conclusions of law are hereby made and adopted by the court:

I.

Plaintiffs are residents of Yavapai County, State of Arizona, and defendant is a corporation organized and existing under the laws of the State of Delaware, authorized to do and doing a mining business in the State of Arizona; that the matter in controversy exceeds, exclusive of interest and costs, the sum of Three Thousand Dollars (\$3,000.00).

II.

That plaintiffs have failed to prove by a preponderance of the evidence that defendant has appropriated any of plaintiffs' water.

III.

That plaintiffs have failed to prove by a preponderance of the evidence that plaintiff suffered any loss of profits by reason of any improper diversion of water by defendant, or that said plaintiffs have been interfered with in the operation of or carrying out of any bona fide mining or milling activity by any wrongful diversion of water by defendant, Bagdad Copper Corporation.

Conclusions of Law

From the foregoing facts the court makes the following conclusions of law:

1. Plaintiffs are not entitled to an injunction enjoining the diversion of water by Bagdad Copper Corporation and are not entitled to any damages from said Bagdad Copper Corporation.

### Judgment

Accordingly, It Is Ordered, Adjudged and Decreed, that plaintiffs take nothing by their action, and that defendant have and recover its costs in this behalf expended or incurred, and,

It Is Further Considered, Ordered, Adjudged and Decreed that this cause be retained by the court for further orders should same be deemed necessary in the future, in justice and equity properly to conserve and protect the rights of respective parties hereto.

Done in Open Court this 2nd day of January, 1951.

/s/ DAVE W. LING,  
District Judge.

Approved as to Form:

COX, LOCKWOOD &  
LOCKWOOD,

By /s/ SIMPSON COX,  
Attorneys for Plaintiffs.

SNELL & WILMER,

By /s/ MARK WILMER,  
Attorneys for Defendant.

[Endorsed]: Filed and entered January 2, 1951.



[Title of District Court and Cause.]

## PETITION FOR RELIEF

Come now the above-named plaintiffs and would respectfully represent to the Court as follows:

### I.

That in the judgment of the Court entered herein on the second day of January, 1951, the Court retained jurisdiction over the subject matter of the action, for the purpose of considering the rights of the parties hereto in the future.

### II.

That the protection of plaintiffs' water rights as granted to them by the State Water Commissioner is a matter of gravest importance to them and their industry in developing, mining and milling their ores and the recovery of tungsten and other metallic values; that without the water due under their appropriation it is impossible to operate plaintiffs' mines and mill and particularly to proceed with the development of the mines of plaintiffs and to mine and mill the ores therefrom, and their entire operation will be stopped solely from the lack of sufficient water with which to carry on operations.

### III.

That before defendant began to pump large quantities of water from Burro Creek there was ample water in the stream, at all times, at plaintiffs' point of diversion, to supply an amount sufficient to



fully cover the appropriation of water granted to plaintiffs by the State Water Commissioner of Arizona, and in addition a small surplus; that from and after the time defendant began to pump large quantities of water from Burro Creek, above plaintiffs' point of diversion, plaintiffs have found themselves wholly deprived of water from about the end of June until the month of December of each year.

#### IV.

That plaintiffs' mine and mill are now and for more than two years last past have been ready for operation and the developing, mining and milling of ore from plaintiffs' mines and mining claims; that all the waters granted to plaintiffs by the State Water Commissioner for use under the said grant or appropriation, to be taken from said Burro Creek at plaintiffs' point of diversion, are actually necessary for plaintiffs' use in developing, mining and milling the ores from plaintiffs' mines and mining claims.

#### V.

That it is uneconomic and wasteful to operate the mines and mill of plaintiffs spasmodically; that without the water supply granted to plaintiffs they can only operate in an off-and-on manner.

#### VI.

That plaintiffs' right to the use of waters from said Burro Creek being prior and superior to the right of defendant to the use of any of said waters of Burro Creek, it follows that plaintiffs should

have the amount of their appropriation and use as called for in their grant from the State Water Commissioner, at their point of diversion, and in the manner and form of their diversion and use under the conditions existing under their grant from the State of Arizona, by and through the State Water Commissioner, without any interference from defendant or others.

#### VII.

That plaintiffs are now able to show and demonstrate to the Court that defendant has been pumping large quantities of water from Burro Creek, above plaintiffs' point of intake, and as a direct result thereof plaintiffs have been wholly deprived of water in the year 1949 from about the end of June until November 17th, and in the year 1950, from September 1st until December 6th.

#### VIII.

That while this action was pending and during the trial thereof defendants continued to pump waters and deprive plaintiffs of the rightful amount and use of the waters of said Burro Creek.

#### IX.

That unless defendant is restrained by an order of this Court it will continue to pump the waters of Burro Creek, upstream from plaintiffs' point of diversion, to such an extent that plaintiffs will be deprived of the amount of water necessary to develop their mine and operate their mine and mill, and will prevent plaintiffs from obtaining the

amount of water their grant calls for, at their point of diversion.

X.

That plaintiffs have no plain, speedy and adequate remedy at law; that the equity power of the Court is needed to give to plaintiffs the relief required.

Wherefore, plaintiffs pray that the matter be inquired into by the Court and upon such inquiry an injunction issue herein restraining defendant from taking waters from Burro Creek in such manner and amount as will deprive plaintiffs of their right amount of water at their intake, and for such other orders as shall be just and proper.

/s/ J. E. RUSSELL,  
Attorney for Plaintiffs.

Duly Verified.

Affidavit of Service by Mail attached.

[Endorsed]: Filed February 8, 1951.

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[Title of District Court and Cause.]

MOTION TO MAKE PETITION FOR RELIEF  
MORE DEFINITE AND CERTAIN

Comes Now defendant and moves the court to require plaintiffs to make their petition for relief more definite and certain in the following particulars:

I.

That said plaintiffs be required to state the time at which it is alleged defendant began to pump large quantities of water from Burro Creek and the times when it is claimed that plaintiffs were deprived of the use of water by reason of such pumping as alleged in paragraph III of said petition.

II.

This motion is based upon the fact that the question as to whether or not defendant herein was depriving plaintiffs of water to which said plaintiffs were lawfully entitled has been heretofore adjudicated by the Court and the judgment thereon has become final.

III.

It is therefore important that the plaintiffs be required to specify with particularity the period in which it is claimed by them that this defendant has been pumping quantities of water which deprive plaintiffs of their claimed right. This information is necessary to enable defendant to properly plead to the petition, including a determination of whether or not a plea of *res judicata* should be interposed.

SNELL & WILMER,

By /s/ MARK WILMER,

Attorneys for Defendant.

Receipt of Copy acknowledged.

[Endorsed]: Filed March 6, 1951.

[Title of District Court and Cause.]

## AMENDED PETITION FOR RELIEF

Come now the plaintiffs above named and for their amended petition for relief allege:

### I.

That in the judgment of the Court entered herein on the second day of January, 1951, the Court retained jurisdiction over the subject matter of the action, for the purpose of considering the rights of the parties hereto in the future.

### II.

That the protection of plaintiffs' water rights as granted to them by the State Water Commissioner is a matter of gravest importance to them and their industry in developing, mining and milling their ores and the recovery of tungsten and other metallic values; that without the water due under their appropriation it is impossible to operate plaintiffs' mines and mill and to proceed with the development of the mines of plaintiffs and to mine, mill and reduce the ores therefrom, and plaintiffs' entire operation will be stopped if they are deprived of the water for which their prior appropriation and certificate provides for.

### III.

That before defendant began to pump large quantities of water from Burro Creek there was ample water in the stream, at all times, at plaintiffs' point of diversion, to supply an amount sufficient to fully cover the appropriation of water granted to



plaintiffs by the State Water Commissioner of Arizona, and in addition a small surplus; that during the year 1949 defendant was taking large quantities of water from Burro Creek, above plaintiffs' point of diversion, which taking of water by defendant was of such an extent that plaintiffs were wholly deprived of water from the thirtieth day of June until the seventeenth day of November of said year, and, again in the year 1950 defendant continued to take large quantities of water from said Burro Creek, above plaintiffs' point of diversion in such large quantities to entirely dry up the flow of water in said Burro Creek and totally deprive plaintiffs of water from the first day of September to and until the sixth day of December of said year.

#### IV.

That plaintiffs' mine and mill are now and for more than two years last past have been ready and in proper shape for operation and the developing, mining and milling of ores from plaintiffs' mines and mining claims; that all of the waters granted to plaintiffs by the State Water Commissioner of Arizona, for use under said grant and appropriation, to be taken from said Burro Creek at plaintiffs' point of diversion, are actually necessary for plaintiffs' use in developing, mining and milling the ores from plaintiffs' mines and mining claims.

#### V.

That it is uneconomical to operate plaintiffs' mines and mill in a spasmodic manner; that without



the water granted to plaintiffs under the authority of the State Water Commissioner of Arizona they can only operate in an on-and-off manner at great expense and waste.

## VI.

That as appears in the records of this cause the right of plaintiffs to the use of the waters of said Burro Creek are prior and superior to any rights that defendant may have in the waters of said Burro Creek, it follows that plaintiffs should have the amount of water required by them and the amount granted them under the authority of the State Water Commissioner of Arizona, at their point of diversion, which said point of diversion is down stream from the point where defendant is taking water from said Burro Creek; that plaintiffs are entitled to the flow of the stream in the manner and form in which it was before defendant's acts reduced the flow of the stream and as above stated dried up the flow entirely.

## VII,

That while this action was pending, during the trial thereof, and at all other times herein mentioned, defendant continued to take large quantities of water from said Burro Creek and to deprive plaintiffs of their rightful use of the waters of said Burro Creek under their permit and appropriation.

## VIII.

That unless defendant is restrained by an order of this Court it will continue to take large amounts

of water from said Burro Creek, above plaintiffs' point of diversion, to such an extent that plaintiffs will be deprived of the amount of water necessary for the developing of their mine and the operation of their mill.

IX.

That under the judgment herein plaintiffs have no remedy other than to apply to this Court in this action for the relief sought.

Wherefore, plaintiffs pray judgment:

That the matter be inquired into by the Court and such trial of hearing be ordered as to the Court shall appear just and proper;

That upon the hearing the Court enter such judgment as shall appear just and proper under the evidence and facts of the cause;

That defendant be enjoined from interfering with plaintiffs' water and water rights and depriving them of their necessary water;

That the Court grant such other and further relief as shall be just and equitable.

/s/ J. E. RUSSELL,

Attorney for Plaintiffs.

Duly Verified.

[Endorsed]: Filed March 28, 1951.

[Title of District Court and Cause.]

ANSWER TO AMENDED PETITION  
FOR RELIEF

Comes Now, defendant and for its answer to the amended petition for relief of plaintiffs alleges:

I.

Defendant admits the allegations of paragraph I of said amended petition for relief.

II.

Defendant denies the allegations of paragraph II of said amended petition for relief.

III.

Answering paragraph III of said amended petition for relief, defendant denies that plaintiffs have been deprived of any water to which they were legitimately entitled and which would have served any useful purpose in the operation of plaintiffs' properties.

IV.

Answering paragraph IV of said petition, defendant denies the allegations thereof.

V.

Answering paragraphs V, VI, VII, VIII and IX of said petition, defendant denies the allegations thereof.

VI.

Further answering said petition, defendant makes reference to Civil Cause No. 321 pending herein

and by reference incorporates in this answer the allegations of said defendants' complaint as filed in this court.

Wherefore, having fully defended against said petition, defendant prays that plaintiff take nothing thereby and that it have and recover relief as prayed for in said Civil Cause No. 321.

SNELL & WILMER,

By /s/ MARK WILMER,

By /s/ JAMES A. WALSH,

Attorneys for Defendant.

Receipt of Copy acknowledged.

[Endorsed]: Filed April 16, 1951.

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[Title of District Court and Cause.]

RENEWAL OF MOTION TO SET  
CAUSE FOR HEARING

The plaintiffs above named, respectfully renew their motion, which has heretofore been denied, by the court, to set the above cause for hearing, for the taking of further evidence, pursuant to the order of the court, heretofore entered. The grounds of this motion being:

1. At the termination of the hearing of said cause, the Court announced that it desired evidence, in order to determine the character of the judgment, to be entered, in favor of plaintiffs.

2. The plaintiff's were under the impression that the Court had actually determined that they were entitled to a judgment, and the only question in the Court's mind was the character of the judgment to be entered, which would settle the controversy for all time.

3. The defendant, Bagdad Copper Corporation, the plaintiff in Cause Number 321, has now appealed the decision of the Court in that cause to the Circuit Court of Appeals. It is probable that no ruling will be obtained from the Circuit Court in less than one year. Plaintiffs feel, however, that in all probability, the decision of this Court will be sustained. The appeal, however, does not, in any sense, act as a stay of execution. For all practical purposes, the plaintiffs have a valid prior water right and are entitled to have their water come to their point of diversion without interference on the part of the defendant in this cause.

4. The evidence in this case clearly showed that for at least five months out of every year, plaintiffs, due to defendant's pumping of water, were deprived of their supply. It further appears conclusively, from the testimony, that the plaintiffs could not operate on an on-and-off basis, and that milling operations, to be feasible and commercial, would have to be on a year round basis.

5. The plaintiffs are desirous of immediately adding to their milling facilities, and to begin milling operations within sixty days, provided they are assured, by the entry of a judgment in this case, that the defendant will be required to let down



sufficient water, particularly during the Summer months for their milling operations. The cost of complete rehabilitation of the plant, would be approximately \$40,000.

6. The plaintiffs are presently negotiating with the proprietors of the Old Dick Mine, near their property, for the milling of a very large supply of ores. In order to handle this business, plaintiffs will be required to enter into a contract for several years and to mill continuously without interruptions.

7. This cause is in no way dependent on Civil Cause Number 321. As stated, the judgment in that case must be considered as final. The plaintiffs have the legal right to an early determination of this cause. There would appear to be no legal obstacle to the final determination of this cause, pending the determination of Number 321 on appeal.

For the reasons stated, the plaintiffs urge that this cause be set for trial, for further hearing at the earliest possible date, so that a final determination can be had. This motion is supported by the affidavit of John Philip Zannaras, one of the plaintiffs, the President of U. S. Tungsten Corporation, the present owner of the property. Mr. Zannaras is a registered mining engineer of wide experience, and is fully familiar with the problems concerning the milling operations involved in this litigation.

Dated this 3rd day of December, 1953.

/s/ JOSEPH H. MORGAN,  
Attorney for Plaintiffs.



[Title of District Court and Cause.]

AFFIDAVIT IN SUPPORT OF  
FOREGOING MOTION

State of Arizona,  
County of Maricopa—ss.

John Philip Zannaras, being first duly sworn,  
deposes and says:

He makes this affidavit on behalf of all of the plaintiffs and for the purpose of showing that it is essential that an early hearing be had in said Cause 221, so that the Court may enter its judgment relative to use of water, under prior appropriation, as determined by the Court in Cause 321.

It is utterly impossible for a milling operation of the kind and character, required in recovering values from the plaintiffs' tungsten ores, to do work on an on-and-off basis.

U. S. Tungsten Corporation, the present owner of the property, has blocked out a large supply of tungsten ores of the value of \$20 and upwards, per ton, which can be milled with profit if a continuous milling operation can be carried on. In order to make maximum recovery of values, the plaintiffs should expend not less than \$40,000 for additional equipment, which plaintiffs' former operations and new improved methods disclosed would be necessary. Such expenditure could not be well justified unless plaintiffs were assured that the defendant would be

compelled to let down sufficient water, particularly during the Summer months, for their needs.

Upon entry of a judgment deciding the issue in 221 the plaintiffs will proceed to make such improvements and hope to be in full milling operation within sixty days thereafter.

Furthermore, the plaintiffs are now negotiating with the proprietors of the Old Dick Mine for milling of their ores. This property has a large supply of high grade zinc and copper ores, at a reasonable distance from the plaintiffs' mill. In order to secure this business, the plaintiffs would be required to enter into a contract covering a period of several years and be able to assure the owners of the Old Dick Mine that they could mill the year round.

/s/ JOHN PHILIP ZANNARAS.

Subscribed and sworn to before me this 3rd day of December, 1953.

[Seal]      /s/ LAWRENCE C. CANTOR,  
Notary Public.

My commission expires: April 21, 1954.

Receipt of Copy acknowledged.

[Endorsed]: Filed December 5, 1953.

[Title of District Court and Cause.]

PLAINTIFFS' MOTION FOR SUBMISSION  
OF CAUSE

Came now the plaintiffs above named and respectfully moved the Court to enter an order submitting said cause, on the transcript of testimony covering hearing of March, 1954, and upon plaintiffs' Submitting Memorandum filed on June 4, 1954, for the reasons following:

1. The defendant has filed no brief or memorandum in accordance with the order heretofore made by the Court in submitting said cause. Defendant's time for filing brief or memorandum has long since expired.

2. As shown by affidavit attached hereto, it is essential that said cause be submitted and determined as early as possible in order that plaintiffs may proceed with their milling operations without deprivation of water.

3. Attached hereto is affidavit showing the situation and the same is hereto referred to and made a part of this motion.

Dated this 7th day of June, 1954.

/s/ JOSEPH H. MORGAN,  
Attorney for Plaintiffs.

Notice

To Bagdad Copper Corporation, a corporation, defendant, and to Messrs. Snell & Wilmer, its attorneys of record:

You and each of you are hereby notified that the above and foregoing motion will be presented to the Court at the Federal Courthouse in Phoenix, Arizona, on Monday, June 14, at the hour of 10:00 o'clock a.m.

Dated this 7th day of June, 1954.

/s/ JOSEPH H. MORGAN,  
Attorney for Plaintiffs.

Receipt of above motion, notice and attached affidavit acknowledged this 7th day of June, 1954.

SNELL & WILMER,

/s/ MARK WILMER,  
Attorneys for Defendant.

AFFIDAVIT

State of Arizona,  
County of Maricopa—ss.

John Phillip Zannaras, being first duly sworn, deposes and says:

He is one of the plaintiffs above mentioned in the foregoing motion.

Since the hearing of the above case in March, 1954, have expended approximately \$15,000 on their mill. Its capacity has been enlarged and plaintiffs will be able to mill approximately 150 tons per day if and when water is steadily available.

Plaintiffs have a large supply of crushed ore ready for milling. The value is \$20 per ton.

The defendant is presently using all water in Burro Creek at its point of diversion. As a consequence of this, the water is now beginning to fail at plaintiffs' point of diversion. Deponent states from former experience that the Creek will be dry before the end of the present month, and there will be no water available for plaintiffs' milling operation, in all probability, before December, except when there may be some flash floods.

/s/ JOHN PHILLIP ZANNARAS.

Subscribed and sworn to before me this 7th day of June, 1954.

[Seal]      /s/ JESSIE BERNEY,  
Notary Public.

My commission expires 12-19-55.

[Endorsed]: Filed June 7, 1954.

[Title of District Court and Cause.]

COURT'S MEMORANDUM ON  
PETITION FOR RELIEF

This cause is before the Court upon plaintiffs' motion for further hearing.

The evidence submitted is not sufficient to enable the Court to find as a fact that during critical months of the year, even if Bagdad ceased its pumping operations, that water would reach the Zannaras point of diversion, and the rule announced in *Albion-Idaho Land Co. vs. NAF Irr. Co.* 97 F. 2d 439, would therefore appear to be applicable.

“While ordinarily a prior appropriator has a paramount right to divert water from the stream and a junior appropriator may not divert water unless the waters flowing in the stream are in excess of the amount which the prior appropriator has the right to divert, if, due to seepage, evaporation, and channel absorption or other physical conditions beyond the control of the appropriators, the water flowing in the stream will not reach the diversion point of the prior appropriator in sufficient quantity for him to apply it to beneficial use, then a junior appropriator whose diversion point is higher on the stream may divert the water. The paramount right of the prior appropriator does not justify him in insisting that the water be wasted and lost by denying its use to the junior appropriator under such circumstances.”



Plaintiffs having failed to prove by a preponderance of the evidence that defendant has appropriated any of plaintiffs' water, they are not entitled to an injunction.

Dated: March 29, 1957.

/s/ DAVE W. LING,  
Judge.

[Endorsed]: Filed March 29, 1957.

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[Title of District Court and Cause.]

FINDINGS OF FACT AND CONCLUSIONS  
OF LAW AND JUDGMENT

This matter was heard upon the amended petition for relief of John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation, a corporation, and the answer to said amended petition for relief of Bagdad Copper Corporation. Said matter having been under advisement, the Court now makes the following findings of fact and conclusions of law.

1. The mill of plaintiffs and their mill site for which water is claimed by plaintiffs is located on Burro Creek, a tributary of the Bill Williams River, which in turn is a tributary of the Colorado River, at a point on said Burro Creek approximately seven to eight miles below the point of diversion of Bagdad Copper Corporation, a corporation.

2. Burro Creek is a seasonal stream, generally wasting away, or tending to waste away, during the months of June, July, August, and on occasion, September in each year, depending upon the rainfall on it watershed. During the remaining months of the year there is generally adequate water in Burro Creek for all claims of both plaintiffs and defendant.

3. Above the point of Diversion of Bagdad Copper Corporation, the channel of Burro Creek flows through generally a bedrock surface channel without substantial overlaying gravels or sand. Immediately below the Bagdad point of diversion and lying between the Bagdad point of diversion and what is commonly known as the old Kingman crossing, a public highway, Burro Creek opens out into a long, flat basin of varying widths, which basin contains approximately 1374 acres. Below the Kingman crossing and to the point of diversion of plaintiffs herein, the channel of the Creek is restricted to a generally narrower channel with the area within the walls of the channel between the Kingman crossing and the plaintiffs' point of diversion containing approximately 82 acres.

4. The basin lying below the Bagdad point of diversion and above the Kingman crossing is overlaid with a heavy deposit of sands and gravel and is substantially overgrown with vegetation such as mesquite, cottonwood and other desert vegetation.

There is a very high loss of water from this basin due to evaporation and to transpiration from the

vegetation growing therein during the hot summer months, which are the months during which Burro Creek tends to waste away.

5. The evidence is insufficient to enable the Court to determine whether the pumping by the defendant Bagdad Copper Corporation during seasons of scarcity has any bearing upon the failure of the water flowing past its point of diversion to reach the point of diversion of plaintiffs due to the high rate of evaporation and transpiration.

### Conclusions of Law

1. If the evidence is insufficient to enable the Court to determine as a fact that the use of water by an appropriator results in injury to the appropriation and the water right of another appropriator, an injunction will not lie.

2. The petitioners and plaintiffs having failed to establish the allegations of their petition and complaint, judgment must be rendered for the defendant.

### Judgment

It Is Ordered that the Clerk enter judgment in favor of the defendant Bagdad Copper Corporation and against the plaintiffs, John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation that said plaintiffs take nothing by their amended petition for relief and that defendant have judgment for costs.

Done in Open Court this 17th day of April, 1957.

/s/ DAVE W. LING,  
District Court Judge.

[Endorsed]: Filed and docketed April 17, 1957.

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[Title of District Court and Cause.]

### NOTICE OF APPEAL

Notice Is Hereby Given that John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation, a corporation, plaintiffs in the above-entitled cause, hereby appeal to the United States Court of Appeals for the 9th Circuit, from the judgment entered in the above-entitled and numbered cause on the 17th day of April, 1957.

MOEUR & JONES,

By /s/ W. J. MOEUR,

By /s/ ANTHONY A. JONES,  
Attorneys for Plaintiffs.

Receipt of Copy acknowledged.

[Endorsed]: Filed May 14, 1957.

[Title of District Court and Cause.]

### BOND OF COST

Know All Men by These Presents:

That we, John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation as Principal, and Fidelity and Deposit Company of Maryland, as Surety, do hereby acknowledge ourselves jointly and severally bound to Bagdad Copper Corporation, a corporation, Defendant, for all costs in above-entitled suit, not to exceed, however, the sum of Two Hundred Fifty and No/100 Dollars.

Conditioned, However, that the said John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation, Plaintiff, will pay all costs that may be adjudged against it in said suit, during its pendency or at the final determination thereof, and judgment for said costs may be entered against us, and each of us, up to the full penalty of this bond, in the final judgment of this cause.

Witness our hands and seals this 25th day of April, A.D. 1957.

/s/ JOHN PHILLIP ZANNARAS,  
FIDELITY AND DEPOSIT  
COMPANY OF MARYLAND,

By /s/ JOSEPH D. ROME,  
Attorney-in-Fact.



Countersigned by:

THE VALLEY NATIONAL  
COMPANY-INSURANCE,

/s/ M. A. CARLSON,  
Agent.

[Endorsed]: Filed May 14, 1957.

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[Title of District Court and Cause.]

ORDER EXTENDING TIME

Good cause appearing therefore, It Is Ordered that the Plaintiffs' time within which to file the record on appeal and docket the appeal herein in the United States Court of Appeals for the Ninth Circuit, be and it is hereby extended to and including July 23, 1957.

Dated at Phoenix, Arizona, this 17th day of June, 1957.

/s/ DAVE W. LING,  
United States District Judge.

Approved this 17th day of June, 1957.

SNELL & WILMER,

By /s/ MARK WILMER,  
Attorneys for Defendant and  
Appellee.

[Endorsed]: Filed June 17, 1957.



In the District Court of the United States in and  
for the District of Arizona

Civil 221-Prescott

JOHN PHILLIP ZANNARAS and J. P. ROBIN-  
SON, JR.,

Plaintiffs,

vs.

BAGDAD COPPER CORPORATION, a Corpora-  
tion,

Defendant.

### REPORTER'S TRANSCRIPT

The above-entitled and numbered cause came on duly and regularly to be heard before the Honorable Dave W. Ling, Judge, presiding in the above-entitled court, without a jury, on the 3rd day of March, 1949, commencing at the hour of 10:00 o'clock a.m.

The plaintiffs were represented by Mr. Z. Simpson Cox, of Messrs. Cox, Lockwood & Lockwood.

The defendant was represented by Mr. Mark Wilmer, of Messrs. Snell, Wilmer, Walsh & Melczer.

The following proceedings were had:

The Clerk: Civil 221-Prescott, John Phillip Zannaras and J. P. Robinson, Jr., versus Bagdad Copper Corporation, a corporation, defendant, for trial.

The Court: Ready?

Mr. Cox: The plaintiffs are ready, your Honor.

Mr. Wilmer: The defendant is ready.

The Court: Call your first witness.

Mr. Cox: Call Mr. Robinson.

JOHN P. ROBINSON, JR.

was called as a witness in his own behalf, and being first duly sworn, testified as follows:

Direct Examination

By Mr. Cox:

Q. State your name.

A. John P. Robinson, Jr.

Q. You are one of the plaintiffs in the action of John P. Robinson—I mean John Phillip Zannaras and J. P. Robinson, Jr., versus the Bagdad Copper Corporation?

A. Yes.

Q. What is your business, Mr. Robinson?

A. Mining.

Q. Do you know Mr. Zannaras, the other plaintiff?

A. Yes, sir.

Q. When did you first know Mr. Zannaras?

A. In October, 1939.

Q. Did you become associated with him at [2\*] that time?

A. Yes.

Q. In what field of endeavor?

A. Mining.

Q. What activities did you and Mr. Zannaras have from '39 on up until your location where you now are operating?

A. Well, in '39 we started out investigating various mining properties in California and in the southern part of Arizona.

Q. Did you locate that property?

A. We located one property in February or March of '40.

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\*Page numbering appearing at top of page of original Reporter's Transcript of Record.

(Testimony of John P. Robinson, Jr.)

Q. Where was that?

A. That was in Yuma County.

Q. Thereafter, did you develop that property?

A. No, we never did.

Q. Did you thereafter locate any other property?

A. Yes. We came up to our present location and we at first leased a group of gold mining claims known as the Mystery Mining Claims before the previous claims which we now have.

Q. You say your present location. Now, just where, geographically in Arizona, is that, Mr. Robinson?

A. Well, the exact location is approximately [3] Township 13 North, Range 11 West, somewhere nearabouts, in Yavapai County, northwestern part of Yavapai County.

Q. How do you get there from Phoenix?

A. You go to Congress Junction and take the new road back into 45 miles from Congress Junction and turn off the new road, about eight miles down into Burro Creek, and the mining property is eight miles this side to the right, six miles in a southern direction from Bagdad.

Q. Six miles in a southerly direction from Bagdad, you say?

A. Yes.

Q. When you found the properties up near Burro Creek what did you first do there?

A. Well, when we got to Burro Creek we laid out our millsite. We picked the location and laid out the millsite on Burro Creek and applied for water rights.

(Testimony of John P. Robinson, Jr.)

Q. About when was that?

A. That was around the first of June—in June some time in '40.

Q. Then what did you do?

A. Well, we started to constructing a road and cabins and then kept on constructing a road up to the millsite where we were going to construct the [4] mill. We dug out the necessary earth, built retaining walls and laid the foundation for the Ball Mill. We then constructed two large 7000 gallon concrete storage tanks, constant storage concrete tanks. We put in a feeder for the Ball Mill and a bin. We put in a 50 ton Gibson Impact Amalgamator, put in a 12 by 18 duplex mineral jig, primary and secondary concentrator tables. Below that a 7000 gallon concrete thickener tank. We have two motors—have two gasoline motors for the operation of the equipment, necessary shafting, belting, and so forth. The mill is partially enclosed. We installed 1500 feet of pipeline from Burro Creek to the tank. We put in a pump, five by five duplex pump and a motor to operate it, and taking our water directly from Burro Creek.

Q. Then, have you located any mining claims there in that locality, general locality?

A. Yes, we located what is called the Zanapolis group of mining claims. It is tungsten.

Q. Do you recall about when you discovered ore there? A. It was in '41.

Q. You say you leased the Mystery Claims?

A. Yes.

Q. What type of ore are those claims? [5]

(Testimony of John P. Robinson, Jr.)

A. That is gold.

Q. Those Zannarapolis Claims, what type of ore?

A. Tungsten.

Q. How many claims altogether do you have up there now?      A. 34.

Q. Did you at any point in your construction run any test runs of your mill?

A. Yes, we had our mill set up.

Q. Just yes or no.      A. Yes.

Q. About when?

A. That was in the early part of '42.

Q. I think you said the Zannarapolis claims were tungsten claims, or did you say?      A. Yes.

Q. These are lode claims or placer claims?

A. Lode claims.

Q. What development work have you done or had you done on the Zannarapolis claims?

A. Well, we originally started at the lower end of the claims and we constructed three and one-half miles of road to get in there, and we started the work at the lower end, digging what we call the open pit material that we have. It is a large deposit right in the side of the hill, and we [6] started open cutting there, developing the area on the lower end.

Q. Did you develop ore there?      A. Yes.

Q. What other work did you do in developing those Zannarapolis claims?

A. After doing some development work on this end, we built another two miles of road, not quite two miles of road, to the upper end of the claims and started sinking a shaft at the upper end.



(Testimony of John P. Robinson, Jr.)

Q. What size is that shaft? A. 8 by 10.

Q. And about how deep?

A. About 50 feet.

Mr. Cox: Mark that.

(Thereupon the document was marked as Plaintiffs' Exhibit 1 for identification.)

Q. (By Mr. Cox): Have you taken any ore from the open cut?

A. We ran a test at the mill.

Q. Has there been ore taken from the shaft?

A. Yes, sir.

Q. Do you know about how much?

A. Well, I don't know the exact figure. We took 10 tons——

Q. You what? [7]

A. We took 10 tons and shipped it to the stock pile, in the Metals Reserve stock pile during the war.

Q. You mean you sold that to the Government, the Metals Reserve stock pile? A. Yes.

Q. Now, getting back to Burro Creek, what is the nature of the country that Burro Creek runs through; is it soil and sandy loam, rock, or what?

A. In the flat country, the flat places that it runs through it is sand, and the rest of it is mostly rock.

Q. Now, since you have been on Burro Creek, have you and Mr. Zannaras used the water from Burro Creek? A. Yes, sir.

Q. And for what purpose have you used the water?



(Testimony of John P. Robinson, Jr.)

A. For mining, milling, and domestic purposes.

Q. You state you made application for a water permit. Were you granted that permit?

A. Yes.

Q. And after that time was there a certificate of water right issued on that permit? A. Yes.

Q. I show you Plaintiffs' Exhibit 1 for identification and ask you if that is the permit that was granted [8] to Mr. Zannaras?

A. That is it.

Mr. Cox: I mean the water right granted to Mr. Zannaras. We offer that in evidence.

Mr. Wilmer: May I ask a question on voir dire?

Mr. Cox: Yes.

Q. (By Mr. Wilmer): Mr. Robinson, did you sign the proof of appropriation which was filed in the office of the State Land Department, the State Water Commissioner, upon which this certificate was issued?

A. I don't recall that I signed it or not. I might have. I don't recall that I signed it or not.

Q. At the time when the application was made to the State Water Commissioner for the issuance of this certificate, had you or Mr. Zannaras actually applied for three million gallons a year in any one year to a beneficial use?

A. Would you repeat that, please?

Q. Had you or Mr. Zannaras, in connection with this application, actually applied three million gallons of water in the preceding year to a beneficial use? A. Before the application was issued?

(Testimony of John P. Robinson, Jr.)

Q. Before proof was filed?

A. Before proof was filed? [9]

Q. Yes.

A. We had not used the full amount, no.

Q. Did you state in this proof that you had used three million gallons?

A. I don't recall that we had used three million gallons. I believe we said we were using it. We had not completed building yet.

Mr. Cox: I will withdraw the offer at this time because I don't think this witness knows.

Q. Did you observe Burro Creek and the water in Burro Creek at the time you went up there and since that time? A. Yes.

Q. Will you just tell the Court what type of flow, how this Burro Creek ran; is it continuous running or is it dry-for-months run, just explain how Burro Creek——

A. Well, in '40, according to the people who have lived in that country——

Q. No, just what you observed, just what you saw.

A. Well, when we was up there it was a dry season in '40 and there was water running in Burro Creek at that time.

Q. And was there any time after that up until June of '48 when there wasn't water running in [10] Burro Creek?

A. There was also some water in Burro Creek.

Q. Was there any time that there was not suf-

(Testimony of John P. Robinson, Jr.)

sufficient water to run your pumps from '40 until June of '48?      A. No.

Q. Were you there on the Burro Creek property continuously from '40 to date?

A. No, I left October 17th, 1948.

Q. Well, were you on the property then continuously from '40 to '48?      A. Yes.

Q. Out living on the Bagdad property all of that time?      A. Beg pardon?

Q. You lived on the Bagdad property all the time?      A. No, living on our own property.

Q. I don't mean Bagdad, I mean the property near Burro Creek?      A. Yes.

Q. Weren't you in the service?

A. Yes, I was two years in the Service; '45 to June, '47.

Q. You didn't live on the property at that time did you? [11]      A. No, I didn't.

Q. When did you go into Service?

A. May, '45.

Q. And you came out when?      A. June, '47.

Q. In May, '45, what was the condition of the mill; state whether or not it was ready or not ready to operate?

A. It was ready to operate, but we could not.

Q. Why?      A. The water was polluted.

Q. When did you come back from Service, you say?      A. June, '47.

Q. Did you go immediately to your mining claims and millsite then?      A. Yes.

(Testimony of John P. Robinson, Jr.)

Q. What was the condition of the mill then; state whether or not it was ready to operate?

A. Well, it took a little bit of repairing. I overhauled some more of the equipment and it was ready to operate.

Q. And will you tell then, after you got back from Service, what you did toward getting the mill ready to operate and getting to—developing the property?

A. Well, I came back in June and I brought the [12] wife with me and I wanted to be near her for a short time until she got used to the desert, so we constructed a laboratory not far from our house. Immediately upon the completion of that, we went to mining and diligently stayed at the mining until in December I brought my wife to Phoenix for another child. In January, then, we started doing development work and ran a test at the mill and did some timbering and preparation to put on a crew of men. In June we were prepared—around the first of June we were prepared to go ahead with our operation, full scale operation. We had hauled down to the mill a bin of ore and pumped up the water, was preparing to bring men out for eight hour operation, and on June 28th when we went down—we started the pump in the morning and the pump ran for just a few minutes, and we looked up and saw there was no water coming out, so we went down to the creek to see what was the trouble, and the suction line on our pipe was out of water so we then dug a hole down to bedrock. We thought we could



(Testimony of John P. Robinson, Jr.)

get seepage, but there was insufficient seepage. We pumped it dry then in around 45 minutes, and in the afternoons, if we would let the hole stay there to fill up with water, we would wait as much as three to four hours and then [13] pump it dry in as much as 18 to 20 minutes, and on cloudy days it may run to 25 minutes, we would pump it dry.

Q. What did you then do—did you run your mill then?

A. No, it wasn't feasible to hire men to run the mill.

Q. Why?

A. Because you can't operate a mill when you have no water; 20 minutes, you can't have men waiting an hour.

Q. Did you make any check as to the water in the creek then?

A. Yes. We immediately after that, we went up to Bagdad and drove down to their diversion point on Burro Creek and found there was sufficient water coming into the little pond where they took their water out of. There was nothing coming below that.

Q. You say "sufficient," you mean there was water flowing in there upstream?

A. Yes, lots of water upstream. We walked up the creek and there was plenty of water, but after reaching the diversion creek at Bagdad there was no water.

Q. What did you then do? [14]

A. Well, I took some pictures there of the creek

(Testimony of John P. Robinson, Jr.)

and we made a trip over to the ranch below and there was no water at the ranch.

Q. Now, the ranch is downstream from the Bagdad diversion? A. Downstream, yes.

Q. What next?

A. Well, they had been at one time irrigating a little land there, but it was all dry and growing up with weeds. They have not irrigated for quite some time, there was insufficient water.

Q. What did you do after that?

A. We came down to Phoenix.

Q. About when was this, now?

A. That was right around the 1st or the 2nd day of July, '48.

Q. That you came to Phoenix?

A. Came to you, yes.

Q. Now, you say you left the property up there on October 17th, I believe you said? A. Yes.

Q. Between June 28th, when you say you found there was no water there, and October 17th, was there any time sufficient water to operate your pumps and the mill?

A. No, no water. [15]

Q. On October 17th, where did you go?

A. October 17th? I came to Phoenix, was here about a week, and then I went to the United States Gypsum Plant in Midland, California, as a mill operator.

Q. What are you now doing?

A. I am a mill operator for the United States Gypsum Company.



(Testimony of John P. Robinson, Jr.)

Q. You intended to stay in that business as a mill operator there?

A. No, I don't intend to stay in that business, but I was forced to go into it because I just reached the point where I was to get some returns from the property, and it set me financially back, and I carried on from June until October, and with the wife and children, I just had to get out and go to work.

Mr. Cox: Mark this.

(The documents were marked as Plaintiffs' Exhibits 2, 3, 4, 5 and 6 for identification.)

Mr. Cox: If the Court please, I would like to withdraw from Civil Case No. 129-Prescott, Defendant's Exhibit A for identification to have it identified in this case.

(Thereupon the document was marked as Plaintiffs' Exhibit No. 7 for identification.) [16]

Mr. Cox: You say you took some pictures at the Bagdad diversion point. I show you Plaintiffs' Exhibit 2 for identification and ask you if that is one of the pictures that you took? A. Yes.

Q. Or an enlargement of it?

A. That is right.

Q. Will you look at that picture closely? Does that picture truly represent the situation there at the diversion point as you saw it on that day?

(Testimony of John P. Robinson, Jr.)

A. Yes.

Mr. Wilmer: No objection.

Mr. Cox: We offer Plaintiffs' Exhibit 2 in evidence.

The Court: It may be received.

(Thereupon the document was received as Plaintiffs' Exhibit 2 in evidence.)

Q. (By Mr. Cox): Will you explain to the Court there Plaintiffs' Exhibit 2 just what is shown by that picture if you will, Mr. Robinson.

A. Well, that shows the intake valve and the pump at the Bagdad diversion point and the little pond or sump-like where they take their water from, plus a ladder that is used for raising and lowering the suction, depending on the amount of water [17] in Burro Creek.

Q. And the water then goes out of the sump up over the banks of Burro Creek?

A. Up over the top, yes.

Q. When the water goes over the top, where does it go into?

A. It goes into a tank, a large steel tank up on the top, up on the bank.

Q. I show you Plaintiffs' Exhibit 3 for identification and I will ask you if that is also one of the pictures you took on that day? A. Yes.

Q. Does that truly represent the situation as it looked on that day? A. Yes.

Mr. Wilmer: No objection.

(Testimony of John P. Robinson, Jr.)

Mr. Cox: We offer Plaintiffs' Exhibit No. 3 for identification in evidence.

The Court: It may be received.

(Thereupon the document was marked as Plaintiffs' Exhibit 3 in evidence.)

Q. (By Mr. Cox): Now, Plaintiffs' Exhibit No. 3 in evidence, does that represent the tanks there as they are? A. Yes.

Q. What is the pipe that goes up the side of [18] the tank and ells off?

A. It comes from the suction line in the previous picture and goes into that tank.

Q. Was there or was there not water flowing there on that day? A. There was water.

Q. Calling your attention to the photograph. There seems to be a light place at the end of that pipe. Is that where the water flows from?

A. That is right. It is coming out there and the light was shown up in the photograph due to the light shining, coming through the water, shows up light.

Q. I show you Plaintiffs'—

Mr. Wilmer: If I could see all of these pictures at one time I think we could stipulate and that will save time.

The Court: Yes, save a lot of time, show them all to him. Are they all marked?

Mr. Cox: They are all marked.

The Court: All right, show them to Mr. Wilmer.

Mr. Wilmer: We will agree they are all pictures taken of that area up there.

(Testimony of John P. Robinson, Jr.)

Mr. Cox: They may be admitted.

Mr. Wilmer: Sure.

(Thereupon the documents were marked [19]  
as Plaintiffs' Exhibits 4, 5 and 6 in evidence.)

Q. (By Mr. Cox): What does Plaintiffs' Exhibit 4 show?

A. That shows the tailings pond at the Bagdad Copper Company.

Q. After the water leaves the tank shown in Exhibit 3 in evidence, where does it go?

A. It goes through the mill.

Q. How far is that from the tank, approximately?

A. Seven and one-half miles from those tanks.

Q. And from the mill where does it go?

A. It goes into the tailings pond.

Q. Approximately how far is the tailings pond from the mill?      A. 300 feet—350 feet.

Q. Calling your attention to this photograph, the automobiles and telephone poles, about what is the size of that tailings pond?

A. I wouldn't know.

Q. Was that tailings pond there in '40?

A. No.

Q. Do you know about when it was put in?

A. I don't know the exact date, but it was put in just about—well, it was started when we instigated our civil suit against them.

Q. What was that, '44 or '45?

(Testimony of John P. Robinson, Jr.)

A. '44 we started it, I believe. It was finished up [20] while I was in the Army. I don't know.

Q. It was some time in that neighborhood that the pond was put in? A. Yes.

Q. And Exhibit 5, what does——

A. That is the breast of the dam and this is seepage of water that comes out from the tailings pond.

Q. Now, you say there was water flowing into the sump shown on Exhibit 2? A. Yes.

Q. I show you Exhibit 6 in evidence and ask you what that is.

A. That is a picture of the same diversion point up from the lower side in the bed of the creek.

Q. Is there anything in that picture that you can identify that shows in Exhibit 2 in evidence?

A. The pump is right there. There is the electric pump.

Q. Will you take a pencil and on the side draw an arrow to that pump?

(The witness complies.)

Q. Write "pump" on there.

(The witness complies.)

Q. And the foreground of this picture is [21] downstream then from that diversion point?

A. Yes.

Q. The land in the foreground or bed in that stream there being dry? A. That is right.

Q. You stated that you sold 10 tons of ore to the Metals Reserve Company. Were you paid for that ore? A. Yes.



(Testimony of John P. Robinson, Jr.)

Q. Did you receive a settlement sheet from the Metals Reserve Company for your payment on that ore?      A. Yes.

Q. I show you Plaintiffs' Exhibit 7 for identification and ask you if that is the sheet?

A. Yes.

Q. And were you paid in accordance with the calculations on that sheet?      A. Yes.

Q. And do the calculations on that sheet show the amount of tungsten in the ore that you sold?

A. Yes, 1.92.

Q. Well, just does that show? We offer Plaintiffs' Exhibit 7 for identification in evidence.

Mr. Wilmer: I don't believe it is material, your Honor, whether the proper foundation has been laid for that or not. [22]

The Court: It may be received.

(Thereupon the document was received as Plaintiffs' Exhibit 7 in evidence.)

Mr. Cox: After you had installed your storage tanks and pump from Burro Creek, did you at any time use that pump to pump water?      A. Yes.

Q. And do you know the capacity of the pump, how much water it pumps?

A. I don't know. It is a 5 by 5 Duplex. It should pump about 1,500 gallons an hour. I am not sure. I wouldn't know the technical point of it.

Q. You say you don't know the technical—how much it does?



(Testimony of John P. Robinson, Jr.)

A. No. Mr. Zannaras takes care of all the technical points.

Q. Are you an engineer?

A. No, I am not an engineer.

Q. Do you know whether Mr. Zannaras is or not?

A. Yes, I do.

Mr. Wilmer: I object to that as calling for a conclusion.

Q. (By Mr. Cox): Did you say you did pump water?

A. Yes.

Q. And do you know how much you pumped?

A. I don't know. We pumped considerable. [23]

Q. Do you know the size of your tanks there?

A. 7,000 gallons.

Q. You are at present, I think you said, a mill operator. What about the mill you have up there, what type of milling will it do?

A. Well, it is dry milling. It is gypsum ore.

Q. No, no, I mean at the Burro Creek property.

A. Well, we can do practically anything. We can do amalgamation, we can do concentration, gravity concentration, and our thickener tank is so set up we can do flotation and gold amalgamation.

Q. What is the capacity of that mill?

A. 50 tons.

Q. 50 tons per what?

A. 24 hours.

Q. Does that mean continuous 24 hour run?

A. Yes.

Q. Have you run any ore through the mill other than the first test run you have just testified about?

A. Yes.

(Testimony of John P. Robinson, Jr.)

Q. And about how much?

A. Well, it is pretty hard to say how much. We hauled quite a bit down there.

Q. Well, have you had any other use for your mill other than your own ore? [24]

A. Well, we could have had use for it. There has been two or three people came to us and asked us to custom ore for them.

Q. Have you had offers to custom ore?

A. Yes.

Q. Is there any other mill in that locality doing milling at which custom milling can be done?

A. No.

Q. Have you had any specific offers to custom mill?

Mr. Wilmer: We object as being immaterial in this lawsuit.

The Court: He may answer.

A. Yes, we have had Mr. Seeds, who owns claims above the mill, and Mr. Austin, who owns claims about.

Mr. Cox: You may cross-examine.

### Cross-Examination

By Mr. Wilmer:

Q. Mr. Robinson, what has been your experience in mining?

A. I was in the coal mining business in East March Chink, Pennsylvania.

Q. What did you do? [25]

A. We had a small mine, a small breaker.

(Testimony of John P. Robinson, Jr.)

Q. You say "we," who do you mean by "we"?

A. I had a partner.

Q. How long have you been in that business?

A. I have been in that business for a year and a half.

Q. That was the extent of your mining business?

A. No, I was born and raised in the coal mining business.

Q. Have you had any experience prior to coming West with respect to mining of metals?

A. No.

Q. Now, as I understand it, Mr. Robinson, you and Mr. Zannaras first came to Arizona in '39?

A. Yes.

Q. Did you stay here at that time?

A. We stayed in Yuma.

Q. Did you do any prospecting other than in Arizona?

A. Previous to that in California.

Q. And any other place?

A. No.

Q. What type of mines or claims on ores were you prospecting for?

A. At that time we was prospecting for gold or silver. [26]

Q. And did you locate any claims in Yuma?

A. Just a copper claim outside of Yuma.

Q. Outside of the City of Yuma?

A. Yes, up in the Dome Mountains.

Q. Were those diversion claims or had they been worked?

A. Part of them a little work done on them and part of them had not.

(Testimony of John P. Robinson, Jr.)

Q. Did you proceed to develop it any?

A. No.

Q. Then you came to Mohave County, is that right, or Yavapai County? A. Yes.

Q. I understand that was in the spring of '40?

A. Beg pardon?

Q. The spring of '40?

A. No, in the summer. We came in the spring first to sample the properties and then came back. It was around June, the latter part of May or the first of June.

Q. How did you locate this particular property?

A. Just by going out to examine the property.

Q. I mean, I believe you said you first became interested in the Mystery Mine?

A. Yes, we leased the Mystery Gold Mining Claims.

Q. Were those developed claims? [27]

A. Considerable development work, yes.

Q. They were not being worked? A. No.

Q. And do you know why those claims had been shut down?

A. Well, I understand they had a little mill down there. Well, it was just a kind of home made affair and they could not make recovery on it.

Q. You don't know personally what it was?

A. No.

Q. Then as I understand it, the first thing you and Mr. Zannaras did was to locate this millsite and construct a mill? A. That is right.

(Testimony of John P. Robinson, Jr.)

Q. Did you at that time know how much water there was available for milling?

A. How much water?

Q. Yes. A. There was considerable water.

Q. I say, did you know? What steps did you take to ascertain it was feasible to construct a mill?

A. Well, most of the veins show on the surface except where they are covered, and we assayed the surface, and assayed where they had done their work.

Q. In other words, you based your determination that the mill would be feasible on the veins [28] that showed on the surface?

A. And underneath.

Q. Underneath?

A. In the ground where they worked.

Q. How was that blocked out, on three sides or just one side? A. Two sides.

Q. You mean you were able to see the extent of the vein from two sides? A. Yes.

Q. I don't quite follow you. What do you mean? Did you see a vein on the face of an open cut or in the face of a cut there which determined what the extent of ore was there?

A. It is all on three sides of the cut.

Q. It is a "U" shape?

A. Part of it is "U" shape and part of it is underground.

Q. What I am trying to get at is, you look at the vein showing on the face of the cut, and based on that and on the veins on the surface of the ground, you



(Testimony of John P. Robinson, Jr.)

determined there was sufficient ore to justify erecting a mill?      A. Yes.

Q. You then started construction at what time?

A. I think it was October, '40, when we [29] started.

Q. That is when you started building the road up to the millsite?      A. Yes.

Q. How many men did you have working?

A. Five.

Q. And the water which you used at that time was sufficient for the domestic use of those men?

A. Yes.

Q. Did you have any other use for the water at that time other than to drink, take baths with or for sanitary purposes?

A. That is right, that is all we needed.

Q. Then when you had the road constructed you built this—you laid the foundation for the mill?

A. Yes.

Q. Do you recall roughly what the area of that foundation is?      A. No, I don't.

Q. Would it be—would it exceed 30 feet by 50?

A. Well, in covering the whole mill it would, yes.

Q. It is in that neighborhood. It is not a whole lot bigger than that, the foundation from the floor?

A. I don't imagine.

Q. You used water to mix the concrete for [30] the foundation and the retaining wall?

A. Yes.

Q. And for domestic purposes?



(Testimony of John P. Robinson, Jr.)

A. And for the tanks.

Q. These retaining walls are about what size?

A. Oh, some of them are six feet high.

Q. How thick?

A. Run from—some of them would be six or eight inches and some of them would be 12 inches.

Q. Those retaining walls are on how many sides?

A. The retaining walls are all on the east and on the north sides.

Q. So that you had a floor, we will say, 50 by 70, to be safe, with concrete, and you had retaining walls on two sides constructed with concrete?

A. Yes.

Q. For which you used water? A. Yes.

Q. In addition to the concrete and the domestic purposes, did you use water for any other purpose?

A. Not right at that moment.

Q. Up to that time you had used it only to make this concrete and to drink, for you and Mr. Zannaras and the other five men? A. Yes.

Mr. Cox: I didn't hear you. [31]

Mr. Wilmer: I say up to that time you had used water for making concrete, to drink and for domestic purposes for himself and Mr. Zannaras and other employees. That is correct, is it not? A. Yes.

Q. When did you first start using water for any other purpose, Mr. Robinson?

A. Well, just as soon as we started up the mine about, I don't know, we started some work, oh, from 15 or 20 days after we got out there.

Q. At which mine was that?

(Testimony of John P. Robinson, Jr.)

A. Mystery mine.

Q. How long did you work that mine?

A. Oh, I don't know.

Q. Did you produce any gold ore?

A. No, we didn't haul any down at the mill because we were still constructing the mill.

Q. Did you ever mill or otherwise dispose of any ore from the Mystery Mine?      A. No.

Q. That was abandoned?

A. That was abandoned.

Q. So what use did you make of the water in the mining operations at the Mystery Mine?

A. Just for drilling.

Q. For drilling? How much water would [32] that require?

A. I don't know—I don't know how much water a jack hammer takes.

Q. You hauled it there in tanks, did you?

A. Yes.

Q. Well, then, up to this point, you had used it for the jackhammers at the Mystery Mine and to make concrete and for drinking?      A. Yes.

Q. When did you make any further use of this water?

A. When we started on the Zanarapolis group of claims.

Q. That was in '41?

A. '41, the early part of '42.

Q. What use did you make of the water there?

A. Mining purposes.

Q. What did you use it for?

(Testimony of John P. Robinson, Jr.)

A. Compressor and jackhammers and hoist, circulating water through the hoist.

Q. You mean what water that is used in the operation of a hoist?           A. Yes.

Q. What was that used for? I am not familiar with mining.

A. For a hoist. [33]

Q. What did you use water in that for?

A. Circulating through the hoist to keep the cylinders cool.

Q. You mean for the engine?           A. Yes.

Q. Does that take an appreciable amount of water?

A. It takes quite a bit when you have it out in the tank.

Q. Those jackhammers are used in connection with drilling or mining operations?

A. On the mining operation.

Q. How much mining had you actually done?

A. The Zanarapolis group of claims, we had done——

Q. Just tell us exactly now what there appears on the face of the earth there to show there was mining operations carried on.

A. Well, I could not figure the tonnage out for you. It is all stacked out up there and I don't know the tonnage.

Q. All I want you to tell is what physical evi-

(Testimony of John P. Robinson, Jr.)

dence there is in the mining operation of the Zana-  
rapolis group.

A. Well, to begin with, the claim, we have an open  
cut.

Q. How big is that open cut? [34]

A. I don't know, 20, 30 by something, I don't  
know, I never measured it. Mr. Zannaras meas-  
ured it.

Q. I want you to tell me what your recollection  
is as to the size of this cut.

A. I don't know, possibly 20 feet by, maybe as  
much as 14 of 15 feet deep and a little cut off to the  
side of the vein three or four feet deep, probably 10  
or 12 feet long.

Q. How was that cut made; how did you make  
that cut?

A. Used a jackhammer and drilled it and plas-  
tered it and hauled it out.

Q. And the use of water, as you said, for circu-  
lating.

A. There, we didn't use the hoist, didn't need  
the hoist there.

Q. So you didn't use water there?

A. Yes, we used water for the jackhammers, do-  
mestic purposes.

Q. What other mining have you done there be-  
sides this one open cut?

A. Well, we moved to the upper end of the claims  
and we started sinking a shaft.

Q. When was that?

(Testimony of John P. Robinson, Jr.)

A. I don't know the date, '40—latter part of [35] '42, first of '43.

Q. How deep and how wide was the shaft that you have sunk there?

A. It is 8 by 10 by, around 50 feet.

Q. 8 feet wide, 10 feet high and 50 feet deep?

A. Yes.

Q. Are there more than one? A. No.

Q. And in that connection you used water for the purpose of your jackhammer and your hoist?

A. Compressor, and so forth.

Q. And compressor. But I believe you stated you operated the mill briefly in '43, is that right?

A. Before that.

Q. When?

A. I don't recall the date when we actually started. We done so much work I didn't keep track, but we hauled it down there.

Q. Let me ask you then, Mr. Robinson, since '41 to date, how many pounds of concentrates has that mill turned out?

A. I don't know. We shipped some to Tucson. We have got a lot out there. I don't know.

Q. Have you produced there over 700 pounds of concentrates? A. Oh, yes. [36]

Q. You are sure of that?

A. Oh, yes; positively.

Q. Where are they?

A. A lot of it out at the plant.

Q. What are they doing out at the mine, why haven't they been shipped?



(Testimony of John P. Robinson, Jr.)

A. That is not a very good shipment.

Q. What do you mean, it is not a very good shipment?

A. In the first place, right now Fensler refuses to buy only in carload lots. They only want it in carload lots.

Q. How long has that been true?

A. I don't know. It has been before I left; I don't know.

Q. The concentrates that you have out there were all produced prior to the time you went in the Army?

A. No.

Q. When was some produced, after you came back?

A. Yes.

Q. When?

A. I produced some just before we shut down in June, Mr. Zannaras and I alone.

Q. How much ore did you run through the mill at that time? [37]

A. That was on June 28th I run about three or four hours, something like that, and it is all down in the gauge box yet and on the concentrator tables, three or four hundred pounds of it.

Q. That was at the time in June, '48, when you operated the mill. When, previous to that, had you operated the mill?

A. Well, after I got it in operation, coming back, I run a test run, not a test run.

Q. When was that?

A. I don't know. Well, it was during the winter of '47 or '48, there in the early part.



(Testimony of John P. Robinson, Jr.)

Q. You ran a test run. How much ore did you run through?

A. I don't know; several truck loads.

Q. What happened to that concentrate?

A. We have got it.

Q. Still out there? A. Yes.

Q. Prior to that when was the mill operated?

A. The night before I went in the Army, before I was drafted.

Q. How long did you operate at that time?

A. Well, I don't recall. All I know is when——

Q. I want to know how long you operated prior to the time you went in the Army, your best [38] recollection?

A. I can't exactly recall. It is a very short time because at that time Mr. Zannaras and I were there alone.

Q. Do you know how many tons of ore you took out at that time?

A. No; I didn't keep track of it.

Q. What did you do with those concentrates?

A. I don't recall how much we sent to Fensler.

Q. Do you have any settlement sheets; do you have anything to show how much you shipped and what you received for it?

A. I don't know. It was only to see if there was any impurities in it.

Q. Just a small amount?

A. Just a small amount.

Q. Prior to that, had you operated the mill?

A. Well, prior to that, practically all test runs.

(Testimony of John P. Robinson, Jr.)

Q. As I understand it, then, Mr. Robinson, after you had the mill set up you ran a few test runs?

A. Yes.

Q. And then prior to the time you went into the Army you ran a small amount through which you went to Tucson to see if you had impurities [39] in it?

A. We started to run in '45.

Q. No; I asked you if, prior to the time that—well, let's get it straight. When was the first time you operated the mill to produce concentrates that you sent to Tucson?

A. I don't recall any dates on that. That is pretty far fetched to remember those dates. I can't.

Q. In '43, you shipped approximately 10 tons of ore to the Government stockpile here in Phoenix?

A. Yes.

Q. That was not put through your mill?

A. No.

Q. Was that hand-sorted ore? A. No.

Q. That was—where was it selected from?

A. Selected right out of a three-foot vein.

Q. Where?

A. In the shaft where I worked.

Q. Now, during all of this period of time there was plenty of ore there? A. Plenty of ore.

Q. Now, I understand you to say you came back. What was Mr. Zannaras doing during the time you were in the Army?

A. I don't know, I didn't keep track of him.

Q. Do you have any particular skill that is [40] required in the operation of that mine out there?

(Testimony of John P. Robinson, Jr.)

A. I don't know.

Q. I mean, do you have any particular skill that could not be replaced by any other person who has had experience in the mining that you have?

A. No; I guess not.

Q. Now, from the period of time in '45 up to the time you returned from the Army, was the mill operated?

A. No; not that I know of; might have been a little.

Q. You don't know if it was?                      A. No.

Q. Plenty of water at that time?

A. I wouldn't know.

Q. Now, I understand you to say, Mr. Robinson, that there was no water in Burro Creek through July, August, September and October of '48?

A. That is right.

Q. How many floods did they have down there, down in Burro Creek during that time?

A. None.

Q. Were you there all the time?

A. I was there all the time except a day's trip to Phoenix.

Q. Are you familiar with the records of the [41] Government at the gauging station that is maintained there at Burro Creek?                      A. No.

Q. Do you know there is such a station there at Burro Creek?                      A. No; I do not.

The Court: We will have a brief recess at this time.

(Testimony of John P. Robinson, Jr.)

(Thereupon, a short recess was taken, after which all parties as heretofore noted being present, the trial resumed as follows.)

Q. (By Mr. Wilmer): Mr. Robinson, is there any water up there now?

A. I don't know, I haven't been up there since December.

Q. Has Mr. Zannaras been up there?

A. Yes; as far as I know.

Q. Well, as a matter of fact, have you discussed with him the matter of reopening the operation of the mill?

A. I haven't had time to discuss that with him. I just got into Phoenix this morning.

Q. Well, did you leave him with the understanding you would return when there was adequate water for your milling operations?

A. Well, just as soon as I can get on my [42] feet again a little bit.

Q. You say, Mr. Robinson, that you are competent to express an opinion as to the proper construction of that mill up there and can state whether or not it was an efficient and economic operation?

A. Well, it is efficient for getting concentrates.

Q. I asked you if you feel that you have the qualifications and the background to justify your stating that the mill is an efficiently operated and/or can be efficiently operated? A. Yes.

Q. You have that experience. Is it true, Mr. Robinson, that——

(Testimony of John P. Robinson, Jr.)

Mr. Cox: Just a moment. What was that again, you had any experience——

Mr. Wilmer: I asked him if he had enough experience to justify him stating that it was an efficient operation. He said he did.

Mr. Cox: I mean your last statement. He started to answer it.

Mr. Wilmer: I am sorry. Did I understand you to say you are qualified, Mr. Robinson, to state that the mill is properly and efficiently constructed? [43]

A. A mill like that, yes.

Q. Is it good practice to operate a mill of that character without a classifier?

A. We are going to get a classifier.

Q. You don't have a classifier yet? A. No.

Q. What provision have you made there for amalgamation?

A. Got a Gibson Impact Amalgamator.

Q. Where is that?

A. 12 by 18 mineral jig is right after the ball mill, but the Gibson Impact Amalgamator sets directly, I will say, facing to the lower side of the mill, to the left side of the mineral jig.

Q. You state that the engine there is in condition to operate there at the present time?

A. I don't know; I have been gone since October.

Q. You say that in the use of a jackhammer and the hoist that you use over 100 gallons of water a day, Mr. Robinson?



(Testimony of John P. Robinson, Jr.)

A. Well, the jackhammer alone uses as high as, let's see, 6,000 gallons, that would be 500 gallons.

Q. 500 gallons in a jackhammer one day?

A. Yes.

Q. Do you run a jackhammer?

A. Yes. [44]

Q. How much experience have you had running a jackhammer?

A. I have run one for seven years.

Q. And you say that a fellow who knows his business of operating a jackhammer without wasting or throwing water away would use 500 gallons a day?

A. It is not a point of throwing it away; we don't throw it away. We use it for wetting the ore down. We need sufficient water.

Q. This 10 tons or so of ore that you shipped to Phoenix to a stockpile, that was all the ore that you shipped to the stockpile? A. Yes.

Q. The Government during the war was very desirous of getting additional supply of tungsten, was it not? A. Yes.

Q. Why did you not ship additional ore to the stockpile?

A. Our contract called for 3,000 tons. We were trying to get our shaft down to where we could stope out and get a sufficient shipment to make up the 3,000 tons over a period of time.

Q. Why didn't you get it out?

A. Well, it is one of those things; you don't [45] finish it up in one day. We don't work on a half



(Testimony of John P. Robinson, Jr.)

million dollar budget, or something like that. We are small people, small operators.

Q. How long did it take you to accumulate those 10 tons you shipped? A. 10 tons?

Q. Yes.

A. I took it out myself in a day and a half.

Q. What kept you from taking out another 10 tons in another day and a half?

A. Because, we took it out and stacked it out there and run it through the mill; was going to start the mill.

Q. Why didn't you run it through the mill?

A. Because the water was polluted at Bagdad.

Q. Because the water was polluted at Bagdad?

A. Yes.

Q. Why didn't you continue to ship from the stockpile?

A. Because by running our own ore we could make more money.

Q. When the water, as you claimed, became polluted, why, you then could have continued to ship the ore to the Government stockpile, could you not?

A. I was drafted in the Army. [46]

Q. Well, you mean that you were drafted in the Army in '45, weren't you?

A. That is correct.

Q. What did you do between '44, when you say the water became polluted, until the summer of '45?

A. We was doing development work to get down to——

Q. You mean when the war was going on and

(Testimony of John P. Robinson, Jr.)

the Government needed this ore and you had it lying on the ground that you didn't ship it?

A. No.

Q. Why didn't you do it?

A. We could not, that is all.

Q. I understood you to say you took out 10 tons yourself in a day and a half? A. I did.

Q. Why didn't you take out another 10 tons in another day and a half? A. I was unable to.

Q. Why? A. Sickness; timbering and all.

Q. What kept Mr. Zannaras from doing it?

A. He can't very well operate a hoist all alone and climb up out of the ground and do it all alone.

Q. Did you have any trouble——

A. He can't even drive a truck. [47]

Q. Did you have any trouble getting the five men that built the road out there?

A. That was before war time.

Q. You could have found a man to take your place? A. Not in the war time.

Q. You told me those 10 tons of ore you shipped down to the stockpile had been hand picked?

A. No.

Q. What additional timbering did you have to do at that time? A. We had just started.

Q. In '44 the shaft that you speak of was at its present depth, was it not?

A. In '44? No; it could not have.

Q. How much did you put down since you came back?

A. I don't know; about 20 or 22 feet.

(Testimony of John P. Robinson, Jr.)

Q. Do you remember, Mr.——

Mr. Cox: I didn't hear the answer.

A. About 20 to 22 feet.

Q. (By Mr. Wilmer): Do you remember this gentleman sitting at the table there, of the United States Geological Survey, coming up there in '44?

A. Yes.

Q. What, if any, changes have you made in the shaft since the day he was out there? [48]

A. It was deeper.

Q. How much deeper? A. 22 feet.

Q. You mean you deepened it 22 feet since?

A. I have not been there. I came back in '47.

Q. It has been deepened 22 feet? A. Yes.

A. What has been done with the ore?

A. What has been done with the ore?

Q. Yes. A. We started to mill it.

Q. Where is the ore you started to mill there now? A. Most of it is setting in the bin yet.

Q. Now, Mr. Robinson, as I understand this, you took out a 10-ton slug of ore in a day and a half; you had the shaft timbered? A. No.

Q. You did not? How long does it take you to timber down—what keeps you from going down with the timber?

A. Well, in the first place, we had to get priority and that took, I think——

Q. To do what?

A. Two months there getting——

Q. To get what type of priority? [49]

(Testimony of John P. Robinson, Jr.)

A. To get priority to buy anything during the war.

Q. What did you have to buy?

A. What did we have to buy? Lumber, and had to wait and find it.

Mr. Wilmer: That is all.

Redirect Examination

By Mr. Cox:

Q. After you got your water permit, how much of the time did you run your pump before you got your certificate of water right?

A. Oh, it run almost every day.

Q. What equipment other than the mill has been placed on the millsite or on the claims?

A. Equipment?

Q. What other equipment in getting—you have obtained what other equipment other than the mill and put on all the claims at the mine?

A. At the mine?

Q. Yes.

A. Well, all the mining equipment, hoist—

Q. I can't hear you.

A. The mining equipment, all the mining equipment, transportation, the hoist and the jackhammer, picking belt, dark room, mineralight for [50] picking the waste out of the bulk, and mining cars, rails, skips, tripod, solid frame; got a laboratory house.

Q. Any other equipment?

(Testimony of John P. Robinson, Jr.)

A. No—a truck, got a large truck, got a 50-ton Army truck, one we bought from the War Assets Administration.

Q. And all of that has been—the equipment was obtained in the interim in preparing to operate?

A. Yes, sir.

Mr. Cox: That is all.

### Recross-Examination

By Mr. Wilmer:

Q. This water that you say you used in mining the Mystery Mine, that came from Burro Creek?

A. Yes.

Q. I believe you and Mr. Zannaras had a lawsuit with a rancher up there over a well, did you not? A. Yes.

Q. Litigation over the ownership of a well, which was a well that had been there for many years. Why did you want the water from that well?

A. Why?

Q. Yes.

A. Because on a mining property you don't [51] care to have anybody sitting there with so-called rights through a period of years.

Q. Well, now, this well is on the road into your property, is it not? A. Into the mine, yes.

Q. Into the mine. About how far is it from the mine?

A. From the mine it is just a little bit over a mile, a mile and two-tenths.



(Testimony of John P. Robinson, Jr.)

Q. A mile and two-tenths, and this was a rancher's well sitting in the wash there, is that right? A. No; it is a miner's well.

Q. Why do you say it is a miner's well?

A. Because it was put there by miners.

Q. When?

A. Oh, I don't know, around 40 or 50 years ago.

Q. How big a well is it? A. About 3 by 4.

Q. And that is how far from Burro Creek?

A. That is around 10 miles.

Q. And you say your reason for taking this well away from this fellow up there is because you don't want any——

Mr. Cox. I object to the form of the question.

Q. (By Mr. Wilmer): You had a lawsuit over it, didn't [52] you? A. Yes.

Q. You now have the right and use of the well and he does not, that is right? A. Yes.

Q. What do you use the water for?

A. It is not good for anything.

Q. Why did you want to get prior right to use it; what was your interest in it if you don't have any use for it?

A. I told you we didn't want anybody on the property holding rights on the property.

Q. This well that you speak of presently has a pump in it, does it not?

A. Yes; we put one up there expecting to pump it dry, clean it out and maybe could use the water. We had to do that to clean it out. You can't bucket it out; it is too tedious a proposition.



(Testimony of John P. Robinson, Jr.)

Q. At any rate, you have a well that has a pump in it and a pipe that comes from it leading into the tank? A. Yes.

Q. Do you use any Hillside water for mining operation? A. Any Hillside?

Q. Yes. [53]

A. Yes; right out of the railroad tank.

Q. That water you didn't use from Burro Creek?

A. No.

Q. You use any water from Pike's place?

A. Yes.

Q. That didn't come out of Burro Creek?

A. No.

Q. How much water will this pump of yours in Burro Creek produce a day; how much will it keep up in haul to the tank?

A. I couldn't tell you. I couldn't figure it out.

Q. Did I understand that from the time you installed that well, or, rather, installed that suction in the creek bed and put in your pump and pipeline up the hill that you ran the pump continuously, every day?

A. We ran it—we had to run it. When we'd take it out of the tanks we had to replenish it.

Q. How much storage do you have up there?

A. We have 14,000 gallons.

Q. You had to fill it up every day?

A. Keep it full.

Q. You mean you used 14,000 gallons every day?

A. No; we didn't use 14,000 gallons every day. We used, I don't know how many thousands of gal-

(Testimony of John P. Robinson, Jr.)

lons. [54] I don't know how many. I know we have a thousand-gallon tank that we put on the back of a truck and we make seven, eight or ten trips with it.

Q. To where?           A. To the mine.

Q. Every day?

A. Yes; we use it to wet down rock.

Q. Now, you mean you have been mining every day with that much water since you were up there?

A. No; some days we would use that and some days more.

Q. How long would it take you to put down this open, or this cut you speak of you have?

A. I don't know. I worked—had another man working with me; I don't know how long he was there. That was before we put up the house out there and we opened in the open cut.

Mr. Cox: I don't think anything has been brought out here, or brought out on redirect.

Mr. Wilmer: Well, I was interested in his saying he ran the pump every day.

The Court: Go ahead.

Mr. Wilmer: I think that is all.

### Redirect Examination

By Mr. Cox:

Q. This well that Mr. Wilmer brought out, [55] is there water in that well?           A. A little bit.

Q. And the water that you got from Hillside, and where else did you say?

(Testimony of John P. Robinson, Jr.)

A. From Pike's place and from Wickenburg.

Q. Hillside, Pike's place and Wickenburg, was that before or after the water in Burro Creek became polluted?      A. That was after.

Mr. Cox: That is all.

### Recross-Examination

By Mr. Wilmer:

Q. Well, do I understand, Mr. Robinson, that this water in Burro Creek was polluted to the extent where you could not use it for wetting down the ore when you were using the jackhammer?

A. We could not pump it, ruin our pumps. We had liners out; was out of the pumps; could not keep them in.

Q. This diversion point of yours is approximately eight or nine miles below Bagdad?

A. About eight miles.

Q. About eight miles?

A. Somewhere in that neighborhood; I never measured it. [56]

Mr. Wilmer: That is all.

(The witness was excused.)

JOHN PHILLIP ZANNARAS

was called as a witness in his own behalf, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Cox:

Q. State your name.

A. John Phillip Zannaras.

Q. Where do you live, Mr. Zannaras?

A. I live at the mine.

Q. And where is that?

A. It is about four miles from Congress.

Q. On Burro Creek?

A. Near Burro Creek.

Q. What is your occupation?

A. I am a registered mining engineer.

Q. Are you duly licensed and authorized to practice professionally within the State of Arizona as a mining engineer?

A. Yes.

Q. Do you use the title and seal of a registered mining engineer?

A. Yes. [57]

Q. Has the State of Arizona Board of Technical Registration for Architects, Assayers, Engineers and Land Surveyors passed upon your qualifications as a registered mining engineer?

A. Yes, sir.

Mr. Wilmer: Just a moment. I move to strike that on the ground that the law provides how a mining engineer gets registered, by the testimony of one mining engineer and submitted two references. He asked if the Board has passed upon his qualifications. There is no qualifications necessary.

(Testimony of John Phillip Zannaras.)

The Witness: There is an examination on the subject. You have to be examined by the Board of Technical Registration.

The Court: Who examined you?

A. The Board of Technical Registration.

Q. Where? A. Three years ago.

Q. Where?

A. It was at the Phoenix Junior College. I passed a written examination.

Q. Who gave you the examination?

A. The Board itself; the engineer who gives you a written examination.

Q. Who was the engineer that was appointed?

A. Well, the Board appoints one at that [58] time. I don't know who he was. I only received questions in writing and I have to pass the examination.

The Court: Go ahead.

Mr. Cox: Did you receive a certificate from the Board?

A. I did.

Q. What is the number of your certificate?

A. 1269.

Q. Are you a member of any technical engineering societies? A. Yes.

Q. What?

A. The American Institute of Mining and Metallurgical Engineers.

Q. What education have you had?

A. I am a graduate of Lehigh University.

Q. What is your degree?



(Testimony of John Phillip Zannaras.)

A. My degree was Naval Engineering.

Q. In receiving your degree did you take all of the usual pre-engineering and engineering courses?

A. I did.

Q. Did you take any course in metallurgy in that engineering course?

A. I did take a course in metallurgy. [59]

Q. Under whom did you take your metallurgical course?

A. I took that from Professor Bradley Stoughton.

Q. Who was he?

A. He is the outstanding authority on metallurgy.

Q. After you graduated from college, what did you do?

A. I was employed as an engineer by the Babcocks & Willcox Company.

Q. What was the nature of your duties with this company?

A. I was an engineer designing machinery for power plants.

Q. How long were you with Babcocks & Willcox?

A. About three years.

Q. After Babcocks & Willcox, what did you do?

A. I was working for the Texas Gulf Sulphur Company as a contractor.

Q. When did you come West?

A. I came West in '38.

Q. And were you contracting in the sulphur in that period between the Babcocks & Willcox and the



(Testimony of John Phillip Zannaras.)

time you came West?           A. Yes, sir.

Q. And what was the nature of your duties [60] in the sulphur?

A. We were handling the sulphur transportation from Galveston, Texas, to the Atlantic Seaboard, Baltimore, Boston, and other places, and our duties was, I was engaged in the materials handling problem.

Q. Did you have a boat?

A. We had our own boat.

Q. You say you came West in '38. What was the purpose of coming West, Mr. Zannaras?

A. I was going to engage in mining, in mining. I was going to find a mining property and build a mill.

Q. Did you find a mining property?

A. We finally did find one.

Q. At your present location?           A. Yes, sir.

Q. What did you do there; first, what did you do when you first found that?

A. We put up a millsite and we applied for water rights because we have to have water. Without water, of course, we couldn't do nothing.

Q. Did you investigate anything concerning that water?           A. I did.

Q. Did you locate—you say you located a [61] millsite. Did you locate any mining claims in that vicinity?

A. We located mining claims in the later time.

Q. What type—did you acquire any claims there or the rights to use any claims?

(Testimony of John Phillip Zannaras.)

A. Yes; we leased the Mystery Mines.

Q. And did you—after that time, did you acquire any yourself?      A. Yes, sir.

Q. How many mining claims did you acquire?

A. We have a number of mining claims and have got the Zannarapolis Claims from 1 to 34.

Q. 1 to 34?

A. 34, and also Electro Mining Claims 1 to 4, and some others.

Q. You have some other claims there also?

A. Yes.

Q. Are those patented or unpatented claims?

A. They are unpatented claims.

Q. Unpatented claims?

A. Unpatented claims, eight of them are under patent now.

Q. When did you locate your millsite there?

A. Some time in December, '40.

Q. And after you located that, did you work the Mystery Claims? [62]

A. We did some work on the Mystery Claims.

Q. Did you ever take any gold out of the Mystery Claims?      A. No; we didn't.

Q. What ores have you located on the claims that you now have?

A. We have located tungsten, copper and gold.

Q. When did you start constructing your mill?

A. We started constructing our mill some time in October, '40.

Q. What does your mill now consist of?

A. Our mill consists of two tanks, one smaller

(Testimony of John Phillip Zannaras.)

tank and a 20-ton bearing and feeder, three by seven and a half ball mill, section classifier, Duplex Denver Jig, 50-ton Gibson Amalgamator, primary concentrator table, secondary concentrator table, and a seven-gallon capacity tank used for a thickener.

Q. Seven gallons? A. 7,000 gallons.

Q. What type of milling is the mill designed to do?

A. The mill is designed for gravity concentration, for flotation and also for amalgamation and cyanidation.

Q. When did you first operate your mill? [63]

A. We run some test in December, 1941.

Q. What did you do after your trial test in the summer of '41?

A. We improved the mill, discovered that tungsten veins required about—we extended the gravity construction, recovery, so we installed an additional concentrator tables and also the jig.

Q. And then what did you do?

A. Then we—in the fall of '41, that was when we located mining claims, tungsten mining claims, and we started developing those mining claims.

Q. You say it was after that that you did this work on the mill?

A. Yes; after we located tungsten claims.

Q. Now, about when was it then that you finished up the work on the mill?

A. Well, the mill was December, '42, I should say, the mill was ready for milling by gravity.

Q. And what did you do after that?

(Testimony of John Phillip Zannaras.)

A. We worked at our own claims, developing our own ores.

Q. And did you develop any ore there?

A. Yes, sir.

Q. How long did it take until you developed the tungsten claims until you had ore available?

A. We had ore available immediately, as [64] soon as we stepped in the place, because the ore is on the surface and it can be removed and milled.

Q. When did you start taking the ore from the tungsten property, do you recall, about?

A. Some time in '42, took a few tons for testing purposes.

Q. Then what did you do?

A. Then we keep developing the place with the object of milling at the same time the ore that we developed.

Q. Had you gone to any full-scale operation of the mill at all at that time, hired any men?

A. Not for the—we ran tests continuously with the mill.

Q. You mean you ran the mill continuously?

A. Not continuously, but I mean very regularly until we adjusted the thing and ran trials.

Q. You say you got the mill ready to develop so that it could run ore?

A. Yes, sir.

Q. And about when was that—now, did you say the latter part of '42?

A. No; the summer of '42.

Q. The summer of '42. You have a bin at that mill, you say?

A. Yes, sir. [65]

(Testimony of John Phillip Zannaras.)

Q. Did you fill the bin? A. Well, almost.

Q. When was that?

A. No; we didn't fill the bin. I remember the bin was not filled. In '42 we took a few tons run for test purposes.

Q. What work did you do after that?

A. We developed the mine.

Q. In what way?

A. We started an open cut at Claim No. 19 and then we made a new road and we moved in another part of the claims, on Claim 28, where we started a shaft.

Q. Now, first, the ore that is being spoken of from the shaft, the ore that was spoken of that was sold, is that the shaft you are speaking of?

A. I didn't get the question.

Q. I will withdraw it. You say you started a shaft on Claim 19?

A. No; we started an open cut on Claim 19.

Q. And the shaft? A. On No. 28.

Q. When was that; about when?

A. Some time probably the end of '42 to '43, maybe '43.

Q. Did you find a good grade of ore or [66] profitable ore on that Claim 28?

A. We did; yes, sir.

Q. Did you take any ore from that or sell any ore? A. We took 10 tons to be stockpiled.

Q. I show you Plaintiffs' Exhibit 7 in evidence and ask you if that is a return from the Metals Reserve Company on the ore? A. Yes, sir; it is.



(Testimony of John Phillip Zannaras.)

Q. Now, this return, does that show the percentage of tungsten in the ore? A. It does.

Q. And what percentage does that show?

A. It says 1.2 per cent  $WO_3$ .

Q. 1.92? A. 1.92 per cent.

Q. I didn't hear the "9."

A. .92 per cent.

Q. What does that mean, Mr. Zannaras?

A. It means that in one ton of ore there is approximately, I should say, about 38 pounds of tungsten trioxide.

Q. Is that what  $WO_3$  is? A. Yes, sir.

Q. In other words, then, this 1.92 per cent on 2,000 pounds is tungsten trioxide? [67]

A. That is right.

Q. And where did the ore come from that went to that stockpile?

A. It came from the shaft of No. 28 claim.

Q. Now, is the 1.92, is that—withdraw that. You had a return from that 10 tons of ore?

A. Yes, sir.

Q. And would it be more profitable to ship the ore unmilled, or to first mill the ore?

A. It would be much more profitable to mill the ore.

Q. Why?

A. Because, first, there are freight charges and treatment charges of \$12.60 per ton, and also there is transportation from the mine down to the stockpile, which is a considerable amount, I should say close to \$8 a ton.



(Testimony of John Phillip Zannaras.)

Q. From your experience in engineering as a registered mining engineer, would you say that the percentage shown on that ore sold at the stockpile is a fair average of tungsten content for ore that could be expected to be milled from the shaft?

A. No.

Q. Why?

A. Because this was taken from a vein which is more selected ore. This was the most selected [68] ore of a big tungsten vein which is there.

Q. In other words, this is taken directly from the vein itself?

A. From the vein itself, but there is lower grade ore on the side of this vein.

Q. What would you say would be a fair percentage average—average ore from the workings there on Claim 28?

A. I should say about 1 per cent.

Q. After you had developed this shaft or started this shaft and made an open cut, did you operate your mill?

The Court: Well, we won't go into that until after lunch.

Mr. Cox: Oh, is it twelve?

The Court: The Court will suspend at recess until 2:00 o'clock.

(Thereupon, a recess was taken at 12:00 o'clock noon.)

(After recess, all parties as noted by the Clerk's record being present, the trial resumed as follows.) [69]

JOHN PHILLIP ZANNARAS

resumed the witness stand and testified further as follows:

Direct Examination

(Resumed)

By Mr. Cox:

Mr. Cox: I believe it is a question that has been asked. Would you read the question, Mr. Billar?

(Thereupon, the question was read by the reporter.)

A. By that time the water was polluted in Burro Creek and we could not operate the mill.

Q. When was that, now? A. Around '44.

Q. Did the water clear up in Burro Creek at any time after that?

A. It cleared, I should say, about the fall of '45.

Q. Did you operate the mill then?

A. By that time Mr. Robinson was in the Army and I couldn't find any men, you see, to hire and replace Robinson, so I did not operate.

Q. When did Robinson get out of the Army?

A. He got out of the Army in '47, summer of '47.

Q. When did he go back to the mine?

A. He came to the mine immediately.

Q. And what did you do then? What did you and Robinson do then? [70]

A. We built a laboratory across from the house where we lived.

Q. Had Robinson and you been in that country before this?

(Testimony of John Phillip Zannaras.)

A. We had some other holdings there.

Q. Are either of you married?

A. Mr. Robinson got married and he had two children; one child, I think, on one side.

Q. Did his wife live at the mine, or where did she live?      A. She lived at the mine.

Q. Had she lived at the mine before he went to the Army?

A. No; he got his wife from the other side. He was single when he left this country.

Q. He was single when he left this country?

A. Yes.

Q. And you say when he got back you built a laboratory?      A. Yes.

Q. Then what did you do, or how long did that take?

A. Well, it took us about two months, a little bit more than two months.

Q. Then what did you do?

A. Then we started overhauling machinery at the [71] mine and at the mill.

Q. What did you do then?

A. Then Mr. Robinson had to come to town again because his wife was going to have a child, and he spent about two months here in Phoenix; her case was a little bit more different, was serious, and I had to be deprived of Robinson for almost two months.

Q. Then when he got back what did you do?

A. We start over again at the mine and at the mill.

(Testimony of John Phillip Zannaras.)

Q. Now, that was in about what time of the year?

A. Well, it was probably in March. In March we started over again and developed the mine.

Q. You mean March of what year?

A. '48.

Q. And when did you finish that work?

A. Some time by June, by June, '48, we already had a working shop and carried the ore to the mill to mill it.

Q. Did you start your milling?

A. We did start the milling.

Q. When?

A. In June, June 28th—no; June of '48.

Q. How long did you run?

A. Not more than a couple of hours. [72]

Q. Why did you stop then?

A. Because, for lack of water.

Q. Had you run the mill in between the time you had the original test run of the mill in June, '48?

A. We run the mill many times.

Q. Did you get any concentrates from those runs?

A. We did.

Q. Have you sold those concentrates?

A. No; except a very small lot.

Q. What is the capacity of that mill?

A. 50 tons per 24 hours.

Q. Do you know what the market price of tungsten is or was from June, 1948, up until—

A. Twenty-eight and one-half dollars per unit.

Q. A unit is how much?

(Testimony of John Phillip Zannaras.)

A. Was 20 pounds. That is for 60 per cent WO<sub>3</sub>.

Q. Has the water come back into Burro Creek since that time? A. It did.

Q. When?

A. About December, about December 2nd, I should say.

Q. Where was Robinson when the water came back? A. Oh, he was in California.

Q. Now, how has the water been since December? [73]

A. Well, during December we were not quite through; we was going to have another shortage or not of water and by January, that was very plain that we have plenty of water.

Q. Did you operate any in January—was Robinson back?

A. No; I had men there but I didn't operate because the weather was bad, had a lot of snow and couldn't move out during January, the weather was very bad.

Q. Have you had any men at the mine since then? A. Yes; I had two men at the mine.

Q. And when did they go to work?

A. Well, about eight or ten days ago.

Q. And what are they doing?

A. They are sinking a shaft.

Q. On contract or by the hour, or how?

A. By the foot.

Q. By the foot. Did you have ore available to operate the mill to capacity? A. Yes; I do.

Q. And where did you have that ore available?



(Testimony of John Phillip Zannaras.)

A. I have ore at the shaft and also at the open cut on Claim No. 19.

Q. I believe you testified that the ore at the shaft, in your opinion, would run what [74] percentage, did you say?

A. I did not testify to that. I don't think I did.

Q. I thought I asked on Exhibit 7.

A. Oh, from the shaft?

Q. Yes.

A. Yes; it run about 1 per cent. I expect it ran 1.94.

Q. .92, isn't it?

A. 1.92, and I testified that in my opinion the entire shaft would run about 1 per cent WO3.

Q. What about the ore from the open cut?

A. The ore from the open cut, it can be mined selectively and supply the mine with ore of 1 per cent WO3.

Q. You say "selectively"?

A. Selectively, yes.

Q. Will the ore run 1 per cent, I mean this mine run?

A. No; it will run one-half of one per cent.

Q. But selectively, in your opinion, it would run 1 per cent of the mill?      A. Yes, sir.

Q. How much would be the content, the tungsten content, of one day's run, full run of the mill?

Mr. Wilmer: May it please the Court, I [75] object to that——

The Court: That would depend upon the quality of the ore.



(Testimony of John Phillip Zannaras.)

Mr. Cox: He just testified 1 per cent ore, on this 1 per cent ore——

Mr. Wilmer: Well, if it please the Court, anyone that has ever been near a mine knows that no one can look at a piece of ore and say this will produce so much material in a given day.

The Court: I can agree to that, but he is asking about certain ore.

Mr. Cox: I am asking about this particular ore.

The Court: Go ahead.

A. That ore would run 1 per cent of  $\text{WO}_3$  and if we have 50 tons, it will produce 1,000 pounds of  $\text{WO}_3$  tungsten trioxide.

Mr. Cox: And is there a loss, any loss in recovery in milling?

A. Yes; a very fair average is about 20 per cent loss. That is, we are going to have 80 per cent recovery of ore.

Q. And you say the price of tungsten was \$28.50 a unit?

A. Yes.

Q. A unit is 20 pounds?

A. 20 pounds. [76]

Q. Then if you had 80 per cent recovery, it would make 800 pounds recovery, is that it, out of the 1,000?

A. Yes.

Q. That would be the gross, then, recovery from the tungsten through the mill?

Mr. Wilmer: Just a moment. May it please the Court, I object to any testimony at least until there is a further foundation shown as to what possibly

(Testimony of John Phillip Zannaras.)

they could have made out of the operation of this mine and mill.

The Court: It doesn't mean very much if he doesn't say how much ore was blocked out. Maybe he only had enough for one day's run.

Mr. Cox: I may be going at it backward.

Q. What ore is there blocked out there, Mr. Zannaras?

A. In the open cut there is a considerable amount of tonnage is already blocked out in the open cut.

Q. How much would you say—do you want a pencil?      A. Yes; I would like to have a pencil.

(Thereupon, a pencil was handed to the witness.)

A. I estimate that there are about 100,000 tons of ore blocked out at the open cut. [77]

Mr. Wilmer: May I ask a question on voir dire?

Mr. Cox: Certainly.

The Witness: On what?

Q. (By Mr. Wilmer): As I understood, this open cut is just a cut into the face——

A. It is a hill which has been cut on the side and exposed the ore.

Q. How far does this cut go into the hill?

A. It runs about 40 feet wide and it runs about 70 feet long and about 50 feet in depth. The highest spot from the hill back——

Q. Would you step to the blackboard and give

(Testimony of John Phillip Zannaras.)

us a diagram of how that is there? I don't understand you.

The Court: You'd better wait until he finishes.

Mr. Wilmer: All right, I will withdraw that.

The Court: Let counsel finish first.

Mr. Cox: Then what ore is there at the shaft, Mr. Zannaras?

A. At the shaft, the entire shaft is ore, so we keep on taking out all of the profit—from the shaft is ore.

Q. You mean to say the shaft is now open?

A. Yes; the dimension of the shaft, 8 by 10, is all ore.

Q. And do you have any way of ascertaining as [78] to whether that is a shallow vein or whether it is deep; do you have any way of determining that—just yes or no?

A. Well, I can't answer it yes or no, see? There is very strong indication, I mean, geological indication, but, of course, unless you diamond drill something you can't tell.

Q. What are the indications as to whether it is deep or shallow?

A. It is deep seated origin, because we could take from the other mines, other mines from the same depth, we can very well estimate the amount.

Q. Is it deep or shallow?

A. Indications are it is deep seated origin.

Q. Now, when you located your millsite and applied for a water right, did you ever obtain a certificate of water right?      A. I did.

(Testimony of John Phillip Zannaras.)

Q. I show you Plaintiffs' Exhibit 1 for identification and ask you if this is a certified copy of your certificate of water right?      A. It is.

Mr. Cox: We offer it in evidence.

Mr. Wilmer: It has been admitted in evidence once.

Mr. Cox: No, no. [79]

The Court: All right, it may be received.

(Thereupon, the document was received and marked as Plaintiffs' Exhibit 1 in evidence.)

Mr. Cox: If you operated the mill with the ore from your claims, what would your expense per day be, Mr. Zannaras, exclusive of depreciation and depletion expense, what would your running expenses be?

A. You mean per ton of ore, you want that figured per ton of ore?

Q. Or per day, per ton of ore then, whichever way you want to give it.      A. Per ton of ore?

Q. All right.

A. I figure in the shaft it will cost us four dollars per ton to mine the shaft. In the open cut it would be much cheaper. I could estimate about \$1.50 at the open cut and it will take one dollar for transportation to the mill, and one dollar per ton for milling the ore.

Q. You compute this roughly at six dollars per ton?      A. Six dollars per ton.

Q. Have you had any other use for your mill other than for milling your own ore?

(Testimony of John Phillip Zannaras.)

A. Yes, sir. [80]

Q. What opportunity have you had to use your mill?

A. For custom milling.

Q. Have you had any offers to custom mill?

A. Many people talked to me about custom milling.

Q. And do you know the price of custom milling?

A. Yes, sir.

Q. And what, in that locality, is a reasonable price for custom milling ore?

A. I should say the minimum price should be five dollars per ton.

Q. Do you do any custom milling?

A. No.

Q. Have you done any?

A. No.

Q. Why?

A. Because I figure it is much more profitable to work our own mine than to custom milling.

Q. Why don't you work your own mine and run custom milling at the same time?

A. We couldn't do that because we have to mill as we develop.

Q. On June 28th, you say there wasn't water in the Burro Creek?

A. No. [81]

Q. You have seen the photographs, Plaintiffs' Exhibits 2, 3, 4, 5 and 6?

A. I did.

Q. When these pictures were taken, was there water being taken from Burro Creek by the defendant, Bagdad Corporation?

A. I should say all of the water was taken from Burro Creek.



(Testimony of John Phillip Zannaras.)

Q. Plaintiffs' Exhibit 6 in evidence, which way—where is upstream?

A. Upstream is the upper part of the picture.

Q. And downstream?

A. Downstream is the lower part of the picture.

Q. Was there any visible water running past the Bagdad sump?      A. Not at all.

Q. Is the Bagdad sump a manufactured or constructed sump, or is it a natural sump?

A. It is a natural sump.

Q. What were you using water for at Burro Creek prior to the pollution and drying up of Burro Creek?

A. We were using it for mining purposes and for domestic purposes and milling purposes.

Q. Had you at any time abandoned the use of water granted you under the water right of the State of Arizona on January 2nd, 1945? [82]

A. I never abandoned the water, not even the locality on my place.

Q. Did you obtain water from any other source other than from Burro Creek?

A. We obtained water from Wickenburg, from Hillside, from Pike's Place.

Q. How far is Wickenburg from your place?

A. Oh, about 70 miles.

Q. How far is Hillside?

A. About 45 miles.

Q. How far is Pike's Place?

A. About 25 miles.



(Testimony of John Phillip Zannaras.)

Q. And what was the use of water—for what purpose did you obtain your water from there?

A. For domestic purposes mainly.

Q. Did you obtain any water from there prior to the pollution of the stream by Bagdad?

A. No; never.

Q. Did you at any time have a definite offer to custom mill ore for any price?      A. I did.

Q. From whom?

Mr. Wilmer: That is immaterial, if the Court please. We object on that ground.

The Court: The witness has just said he would not do that anyway. What difference does it [83] make?

Mr. Cox: It goes to the measure of damages.

The Court: I know, but your witness said a moment ago he would not custom mill ore, preferred to mill his own ore, so what difference does it make?

The Witness: I don't mean I wouldn't custom—

The Court: Just a minute.

Mr. Cox: If the Court please, the measure of damages—it is for a smaller amount than the amount shown by milling his own ore.

The Court: What difference does it make? He said he wouldn't do it. You remember he just testified to that. All right, then.

Q. (By Mr. Cox): Had you observed the flow of Burro Creek prior to the time that Bagdad put in the pump shown on Exhibit 2, the picture of their pump?      A. Yes, sir; I did.

(Testimony of John Phillip Zannaras.)

Q. Was there any time up until the time that they put in their pump that there was no flow in Burro Creek?

A. No; there was always a flow in Burro Creek.

Q. On the day that you took these pictures, or Mr. Robinson took the pictures, did you observe Burro Creek above the Bagdad diversion point?

A. I did. [84]

Q. Was or was not Burro Creek flowing then?

A. There was plenty of water flowing in Burro Creek.

Q. Did you observe the water that was going into the tank shown in Plaintiffs' Exhibit 3 in evidence?

A. Yes; I did.

Q. Was there or not water flowing into the tank?

A. It was, and it is showing in the picture, too. It can be seen in the picture.

Mr. Cox: That is all.

### Cross-Examination

By Mr. Wilmer:

Q. Mr. Zannaras, I believe you said that you graduated from Lehigh in 1927 with the degree of Naval Engineering?

A. '24—in '24 I graduated.

Q. You said you had some courses in metallurgy?

A. Yes, sir.

Q. How were they related to Naval Engineering?

A. Well, I took some other courses in reinforced

(Testimony of John Phillip Zannaras.)

concrete, and it was not related. I don't see why one course would be related to the other.

Q. Did that have reference to the recovery of gold and silver and similar ores from ore [85] bearing such minerals?

A. That is mineral dressing. It was not mineral dressing.

Q. It had relation to the refined metals, did it, such as silver?

A. It had relation to many metals.

Q. In any event, it had nothing to do with the business of running a mine in the West?

A. Oh, yes.

Q. In what respect?

A. Because this was the principles of metallurgy and its principles applied in every phase where metals are concerned.

Q. Well, does the process of refining steel, for instance, have anything to do with the running of a copper mill?

A. It has to do with the solution. Steel is a solution, so is every other mineral. Refined copper is the same thing.

Q. In any event, the courses which you took had nothing to do with the business of running a copper, gold, silver or tungsten mine?

A. No—what you say? I say it did have some.

Q. Then after you graduated, you worked for a firm known as the Babcocks & Willcox, is that right?

A. Yes. [86]

Q. And that was in the making of machinery?

(Testimony of John Phillip Zannaras.)

A. Yes; designing machinery.

Q. Designing machinery. Then you left then and engaged for a period of approximately ten years in transporting sulphur from the Gulf of Mexico to the Eastern Seaboard? A. Correct.

Q. That involved the manner of loading sulphur at the dock? A. Yes.

Q. The navigation of the boat to the proper seaboard and unloading it?

A. And other questions, and other questions.

Q. What other questions?

A. Well, we have to try to save labor by devising methods of handling that sulphur with the least expense. For example, I had a device, what is known as self-trimming bulkhead, by which we eliminated about 40 men.

Q. What was your relationship to this company?

A. Well, they called me a part of their organization.

Q. A part of their organization. Then in '37, that operation was terminated, is that right?

A. Correct.

Q. It was not successful? [87]

A. Well, not quite so. I think there were different interests that came in.

Q. For a period of several years you were engaged in litigation over the matter, is that right?

A. No; I did not. I had litigation for one year.

Q. And then you came to the West to look for a mining property, is that right? A. Correct.

Q. You went first to Yuma, did you?

(Testimony of John Phillip Zannaras.)

A. No; I went first to Las Vegas, Nevada.

Q. And prospected?

A. Looking—examination of properties, not prospecting.

Q. Examination of properties for yourself or others? A. For myself.

Q. Then where did you go to from Nevada?

A. I went to California.

Q. And how long did you stay there?

A. Well, I made a trip back to the East again and came back to California again. That took me up to some time in '49.

Q. And then you came to Arizona, is that right?

A. Yes; we came to Arizona with Mr. Robinson.

Q. First to Yuma? [88]

A. No; we went out to California first, the northern part of California, and then we came to Yuma and then we came up to Burro Creek.

Q. The location that you made or the mine that you located in Yuma County, did you do anything with that?

A. Yuma County, we have a mining claim; it is a copper claim, and I think probably Mr. Robinson was confused. That was located after we came in this locality.

Q. Well, you still have it, I presume?

A. We still have it; yes.

Q. Then you located on Burro Creek, is that right? A. That is right.

Q. How did you come to locate there?

A. Well, as I told you, we were looking for



(Testimony of John Phillip Zannaras.)

property which brought us from Nevada to the border of Oregon, down to Yuma, and we were examining properties. When I went to Burro Creek, I think I found the elements for which I was looking. Then I found water and I found plenty of ore and mines in that locality.

Q. How do you know you had plenty of ore?

A. I could see the Mystery Mines in the locality up there, rich bars of gold ore. [89]

Q. At the Mystery Mine?

A. Not only at the Mystery, in all that vicinity.

Q. Anybody working on those gold bars now?

A. Yes; they are held up, though. No gold mine is prosperous now, no gold mine all over the United States. Gold mining is rather slow, but I believe they are going to pick up now.

Q. What is the price of gold today?

A. \$45 an ounce.

Q. And what is that price with respect to what it was three years ago?

A. It is the same price.

Q. Same price?

A. Yes, and for a gold license from the United States Gold Treasury.

Q. In any event, you found these rich gold properties, is that right?      A. Yes.

Q. Were they being worked at that time?

A. No.

Q. So you took a bonded lease on it, did you?

A. Yes.

Q. Then what did you do?



(Testimony of John Phillip Zannaras.)

A. I went down to Burro Creek and started looking for a millsite and mill, and took a water right.

Q. Did you do any development or [90] exploration work on the Mystery Mines before you put up this mill?

A. We had a lot of samples. The openings was there and the ore is blocked out, and we saw assayed stuff.

Q. Where did you have it assayed?

A. We did our own assaying.

Q. Where did you do that; where did you have the equipment?      A. Down in Yuma.

Q. You had a laboratory in Yuma there?

A. I had assay—I had a fire assay in Yuma.

Q. You what?

A. I had fire assay in Yuma.

Q. You satisfied yourself it was a good property, is that right?      A. Yes; they were.

Q. How much ore did you have blocked out there, do you know?

A. No; I don't recollect exactly, but I know around many thousands of tons.

Q. What was the percentage of gold in the ore?

A. It ran about \$27 a ton.

Q. That is pretty good gold ore?      A. It is.

Q. Do you still have that bonded lease? [91]

A. No; I don't.

Q. You gave that up?      A. Yes.

Q. Now, Mr. Zannaras, the first thing you did was to build the road, I believe, and lay your foundations and put up your walls?

(Testimony of John Phillip Zannaras.)

A. That is right.

Q. You had the mill constructed and ready for operation in, I believe you said, May of '42?

A. Yes.

Q. Was that, when it was ready for operation, as a tungsten milling operation or for gold milling operation?

A. No; it was for tungsten milling operation.

Q. Well, I believe then, as I recall, you said you previously had it set up or originally had it set up as a gold milling operation?

A. Well, gold milling operation is nothing else but a ball mill and an amalgamator and tank or cyanidation.

Q. Did I understand you to say that you had it completed for gold milling operations before you discovered the tungsten?

A. I should say it was practically completed for gold purposes.

Q. Then you discovered this tungsten [92] deposit?      A. Correct.

Q. What did you do immediately when you discovered it?

A. What did I do when I discovered it?

Q. Yes.

A. Well, I will tell you, at that time we were at war, which was very important—tungsten was very important at that time, so I started to change the plans and make gravity concentration at the mill.

Q. That was the first thing you did?

(Testimony of John Phillip Zannaras.)

A. Yes.

Q. Then what did you do?

A. Of course, I located the ground and proceeded to develop it.

Q. Did you proceed to develop it or did you proceed to fix your mill up first?

A. Fix my mill first. My mill practically—was practically finished. It was done at the same time. The mill was developed with roads and other works.

Q. Was that the open cut work shaft that you speak of?

A. I mean about the entire mining claims in general.

Q. Didn't I understand you to say you first [93] made an open cut on No. 19?

A. Well, we made a lot of diggings in other places, but that was the major operation as we saw.

Q. Was the open cut first?

A. With respect to what?

Q. With respect to your development? I believe you said a moment ago you made the open cut on 19 first?

A. When we started developing the mine—

Q. Now, I want to ask you this question: Did you make the cut on 19 first, or did you make the cut at the same time?

A. I made the cut first.

Q. How did you make that?

A. We had a compressor and jackhammers—jackhammers and a compressor.

Q. A bulldozer?

(Testimony of John Phillip Zannaras.)

A. Not a bulldozer. The bulldozer was to fix the road.

Q. Then you abandoned that and moved onto No. 28?      A. We did not abandon it.

Q. You quit working it?

A. Well, we run it twice to work on No.—a higher claim, on No. 28.

Q. About that time, I believe, Mr. Zannaras, [94] you made an application to the Reconstruction Finance Corporation for a loan, did you not?

A. I did.

Q. And they sent Bill Gohring out to examine the property and Mr. Maitland?      A. Yes.

Q. Did they make a loan?

A. They offered me a loan.

Q. What did they offer you?

A. They offered me first \$5,000.

Q. Did you accept it?      A. No.

Q. Why didn't you?

A. Because I thought it was too small.

Q. Too small?      A. Certainly.

Q. How many years' experience has Mr. Gohring had in mining, do you know?

A. No; I do not know.

Q. Isn't it a fact, Mr. Zannaras, that you wrote them a letter and said you would not accept any loan unless they would let you spend \$8,000 more on your mill, and they told you you had to do development work there to see if you had any ore there?

A. No; that is not correct. [95]

Q. Did you write a letter in which you stated



(Testimony of John Phillip Zannaras.)

that your application for the loan was conditioned on being allowed to spend \$8,000 on your mill?

A. I don't recollect of such a letter.

Q. Did you make any such condition orally?

A. No. The only condition I made was, they ought to give me more money. I spent lots more money myself. I mean \$5,000 out there is a very small amount.

Q. How much money did you think they should give you?

A. I told them what the next loan was. It was not my opinion. The Government has different types of loans. The first type, it started with \$5,000 and the next is \$20,000, and they offered to give me Five and another Five, and I refused to go into business with 5,000.

Q. In any event, you went ahead with your construction of the mill; you had that completed in May, 1932?

A. '42.

Q. Pardon?

A. '42. You said '32.

Q. I meant '42. I am sorry. It was all ready to go?

A. Yes; I should say. [96]

Q. With respect to the ore that is too big that comes through your mill, how do you get it back up to the head of the mill there?

A. There is a screen that—there is a classifying screen up on the exit of the mill, and the ball mill is so regulated so that only ore that passes that screen goes through.

Q. How do you get what is left—

A. That doesn't come out.

(Testimony of John Phillip Zannaras.)

Q. Where does it go?

A. It stays in the ball mill.

Q. Well, in any event, Mr. Zannaras, did you start doing any milling at that time?

A. We did mill.

Q. How much did you run through the mill?

A. Well, besides tungsten ore, we made some milling of the gold, and I do not remember the exact tonnage.

Q. I thought you told me just a little bit ago you never did——

A. We tried some ore for both.

Q. I am speaking now of your tungsten operation; how much tungsten did you put through your mill in '42; how much tungsten ore?

A. Well, it wasn't very much. I don't remember exactly. [97]

Q. Now, did I understand you to say that this vein of ore that you sent to Tucson, or rather, the ore which you sent to Tucson was not hand picked?

A. No; it was the run of the mine.

Q. Run of the mine? A. Yes.

Q. You have lots of it there? A. Yes, sir.

Q. Now, during '42, what prevented you from selling more ore, Mr. Zannaras?

A. I told you we developed the mine.

Q. What do you mean by "development"; what did you do?

A. We make new road and go up in the other place. We were done, you see, we have to go other places. I had to make, maybe a mile and a half of road.



(Testimony of John Phillip Zannaras.)

Q. How did you make that, with a County bulldozer?      A. Yes.

Q. How long did that take you?

A. Oh, it took quite some time, because a fellow who used to come and work at Bagdad, and come after 5:00 o'clock, and go to our place after 5:00 o'clock, and work for one hour and quit.

Q. What were you doing in the meantime? [98]

A. Back in mill trying to improve our place. We built some houses and done some grading, and so on.

Q. Why didn't you go ahead and pull ore from the open cut?

A. We already decided to go from the other place.

Q. My goodness, gracious, do you mean at the time the war was going on that you were just stubborn——

A. Let me tell you something, you sit back here, but you come back in the mountains, I will show you how things are going.

Q. I'd like to know why you didn't go ahead and mine from the open cut?      A. I had test——

Q. Why didn't you go ahead and mine from the open cut?

A. I have the mill and we found it best for us to move to other place.

Q. I know, but this time when this fellow came in and worked for an hour, why didn't you—during that time you didn't mill from the open cut.

A. Because at that time we thought that was the best thing to do.

(Testimony of John Phillip Zannaras.)

Q. You mean fool around?

A. No; we weren't fooling around, nobody [99] fool around back there, I can tell you that. You come up back in the mountains, you can't fool there. You probably fool in town.

Q. Well, now, Mr. Zannaras, I'd like to find out why it is you had your mill all set and ready to run, you had this open cut there which you say you could mine very cheaply?

A. That is right.

Q. And profitably. Why did you then go ahead and build houses and things of that kind?

A. I will give you an answer for that. Bagdad is responsible for us—Bagdad is the one that stopped us, from pollution; Bagdad is trying to grab and Bagdad is trying to drive us out there, that is the reason we can't work.

Q. Let's get back to the question, Mr. Zannaras. In 1942, and the middle of the summer, you had your mill ready to go?

A. Yes.

Q. You had an open cut exposure of ore that you say there was 100,000 tons?

A. That is right.

Q. You say it is a profitable operation to mill it?

A. It is.

Q. You were all set to go, and yet you did [100] no mining. I want to know why you didn't go ahead and mine there until you could get ready.

A. All right, I will answer it. At that time I had a visit from the United States Geological Survey, Dr. Krenkoff visited my place and spent all night going over the claims, and after we finished he rec-

(Testimony of John Phillip Zannaras.)

ommended to me better to start mining at the high grade place on Claim No. 28, and that he was going to recommend a big loan from the Government.

Q. For the purpose of what?

A. Developing up there, the No. 28. That is the reason I moved up to 28, and that is the reason we were in a hurry to get up there.

Q. In any event, Mr. Zannaras, you did not turn out any tungsten in '42?

A. No; I wasn't ready, quite ready.

Q. Then in '43, did you turn out any tungsten; did you operate the mill then?

A. That is the time we start working at the shaft. We have to develop the shaft.

Q. How long does it take to put down a shaft 8 by 10 by 30 feet?

A. You do not go on down that way. You have to move compressor in there, you have to make preparations for compressor and foundation for hoist. [101] I do a good job, not a kind of incomplete jobs.

Q. In any event, you didn't produce any ore or any tungsten in '43?

A. Except the one that was shipped to the stock-pile.

Q. That was 10 tons? A. Yes.

Q. I am a little curious about that, Mr. Zannaras. That was a pretty profitable operation, wasn't it? A. Which one?

Q. The 10 tons that you shipped to the stock-pile.

(Testimony of John Phillip Zannaras.)

A. With \$25 taken out of it? I didn't think it is very profitable.

Q. Well, Mr. Robinson said you got that 10 tons out in a day and a half himself and you received \$358.34 for the 10 tons, did you not? A. Yes.

Q. Which meant you received \$358.34, out of which there had already been deducted the treatment, had there not? A. Yes.

Q. So that——

A. And also transportation.

Q. And also transportation? [102]

A. Was paid.

Q. This settlement sheet shows the net received from those 10 tons, after deducting chemical treatment and freight and handling, to be a net of \$358.34. Now, do I understand you had to pay additional transportation? A. Stock piling.

Q. Eight dollars a ton?

A. Something like that.

Q. So we deduct \$80 from the \$358 and we get \$278? A. Yes.

Q. For a day and a half work?

A. No; you shouldn't look at it that way. For a value of \$700 we get \$270. Now, that is not good business.

Q. Pardon me, I don't follow you.

A. We mine the material which values \$700. That material at the mine values about \$700, and we receive \$270 for it. That is poor business, I should say.

(Testimony of John Phillip Zannaras.)

Q. That is an average profit per ton of \$27, isn't it?

A. I tell you, it all depends on what you mine. A straight car of ore, you just throw two-thirds of it away. [103]

Q. I thought you said this was mine run ore just a moment ago?

A. Then I told you what come from the vein about three feet wide on the side, big vein. That is what I say.

Q. Anyway, you had a lot more of it?

A. Yes, and we had.

Q. As a matter of fact, the average small mine is considered very profitable if it makes a dollar a ton?

A. A dollar a ton, small mine?

Q. Yes. A. I think you are mistaken.

Q. In any event, for some reason or other, Mr. Zannaras, you elected not to proceed with further mining of this material and sending it to the stock pile?

A. My method was an economic solution of the problem.

Q. In other words, you wanted to make more money out of the material, is that it?

A. I would be foolish to pay so much money at the time I got all the facilities for milling and exploring stuff.

Q. Would it be foolish on the basis of the fact that you saying you were changing over to [104] strategic material in the period of war, wouldn't



(Testimony of John Phillip Zannaras.)

that be a consideration to you that the Government needed that?

A. The Government did not need tungsten so much. You probably don't know much about it.

Q. Why didn't you stock pile it; why would they be willing to come out and make a loan?

A. Yes, but it was for copper and everything.

Q. Which was for the purpose of developing strategic materials?

A. I am not competent in expressing the Government's policy.

Q. In any event, Mr. Zannaras, you stopped operations. But you say it produced you \$27 a ton net?

A. Net? 27? Let me see. I will have to check it up.

Q. I think you agreed at eight dollars a ton, which would be \$80 from 358, which would be \$278.

A. All mining expenses are not included in there.

Q. A day and a half work for Mr. Robinson.

A. Well, a day and a half work, but that rate of a day and a half wasn't alone. He worked a day and a half, but you got to figure out how much time it took him to put the hoist there, compressor [105] there.

Q. It was all ready then, you had all of that work done; you were ready for mining at \$27 a ton and you didn't do it?

A. No; we didn't do it because it wasn't ready to do it.



(Testimony of John Phillip Zannaras.)

Q. In '44, you say the pollution of the water made it impossible for you to mine, is that right?

A. Correct.

Q. Mr. Zannaras, below your place, or, rather, below the Kingman Crossing and between the Kingman Crossing and your place, there are a number of deep holes, are there not, 20 and 30 feet deep which are generally filled with water?

A. 20 and 30 feet long?

Q. Yes. A. 30 feet long is probably one.

Q. There are places down there where people from Bagdad come down and swim below Kingman Crossing and your property? A. Yes.

Q. And they go fishing there?

A. Some, yes. They used to go until Bagdad killed the fish.

Q. You mean to say there is no fishing there now? [106] A. Very little.

Q. You know, as a matter of fact, they were fishing there in the summer of 1944 and the summer of 1945? A. A good fish story.

Q. I am asking you a question: Isn't it a fact that the water didn't even kill the fishing there?

A. Don't tell me, I live there. People don't come but once a year. I live on Burro Creek. I saw fish dead on the bank, and by the thousands.

Q. By the thousands?

A. Yes, and even now the water is poisoned.

Q. In any event, Mr. Zannaras, you were unable to do any milling in '45 because these tailings escaped eight miles upstream and still came down

(Testimony of John Phillip Zannaras.)

and polluted your water? A. They did.

Q. And the bedstream in between Bagdad and your property is principally of a sandy nature, is it not? A. No, sir.

Q. As a matter of fact, Mr. Zannaras, approximately a half mile below Bagdad? A. Yes.

Q. The water in normally low seasons disappears, doesn't it? [107]

A. Not in normal seasons.

Q. In the ordinary summer the water will go under, disappear below Bagdad and reappear below Kingman Crossing? A. Never.

Q. Never?

A. Extraordinary, maybe, but not ordinary conditions. There is always sufficient water in Burro Creek, there used to be.

Q. For it to disappear it has to be of a sandy formation, gravelly formation? A. It must be.

Q. Did I understand you to say that between Bagdad and your place it is a rock bed?

A. Well, it is most part rock. It is about seven miles, with sand on top of it. The bed is rock.

Q. The water flows through the sand, doesn't it?

A. No; not necessarily. It is rock, rock, the bed of the creek is rock and on top of it there are batches, layers where there is gravel and sand accumulated, and they are shifting all the time.

Q. All right. In any event, in May, '45, the water became clear, did it not?

A. May? No; that was probably in the summer of '45. [108]

(Testimony of John Phillip Zannaras.)

Q. Do you remember testifying, Mr. Zannaras, in this case up in Prescott in respect to this matter?

A. Some; was many years ago.

Q. You remember that your deposition was taken which is in the file here? A. Yes.

Q. At that time you were asked questions under this deposition taken July 2nd, 1945? A. Yes.

Q. "Question: Has the water cleared up again? Answer: Yes. Question. Is it clear now? Answer: Yes. Question: On July 2. How long has it been clear? Answer: I would say from about May 15th. Question: May 15, 1945? Answer: That is right."

The Witness: I may be mistaken. Instead of May it is June. One month.

Q. You testified at that time it was on May 15th, 1945? A. I presume that is correct.

Q. The water cleared up. Now, have you operated the mill any since that time, Mr. Zannaras?

A. Since '45?

Q. Yes. A. Well, yes; we did a little bit.

Q. When? [109]

A. We run it for some trial tests in '46 and also we run the mill for trial tests.

Q. When? A. In '46.

Q. At what time?

A. I don't remember the exact time.

Q. How much ore did you put through it?

A. Very little. It was just checking it, checking the condition in the mill.

Q. Why didn't you, when the water cleared up

(Testimony of John Phillip Zannaras.)

on May 15th, 1945, begin mining your ore and milling it?

A. Because Mr. Robinson went to the Army.

Q. Well, now, what particular peculiar qualifications does Mr. Robinson have as a miner that can't be replaced by anyone else?

A. If you will look at your papers you will find out in that period there was a very acute shortage of labor, very acute.

Q. You mean you were unable to hire ordinary men?

A. Yes, without qualifications, and Mr. Robinson, I wasn't—I was unable to hire. I couldn't find him.

Q. You made considerable search, did you?

A. I did; in fact, we passed a resolution in Prescott asking the Government to defer miners, [110] all miners deferred from the Service, but they didn't do it, but at the war they picked up every miner and inducted them in the Army.

Q. And the reason you made no attempt to operate in '45 was because Mr. Robinson had gone into the Army?      A. Correct.

Q. Why didn't you operate in '46?

A. The same condition; we had the same condition in '46.

Q. Mr. Zannaras, you are an expert, are you not, you are the engineer?      A. That is right.

Q. You are the one who has had metallurgy?

A. Yes.

Q. Mr. Robinson's experience was as an operator

(Testimony of John Phillip Zannaras.)

of a small coal mine in the East. Now, other than for the fact that he had had that experience, did he have any other qualifications that you could not replace?

A. Mr. Robinson stayed with me for several years, he learned lots of things. He is very capable in milling.

Q. Very capable in milling. What experience has he had in operating a mill such as you have?

A. He done it in my place. He helped put [111] up the mill and he learned everything.

Q. Does that qualify a man to be an expert in operating a tungsten mill?

A. He is not an expert, but he is capable. He does not qualify as an expert.

Q. What experience has he had other than he had in putting the mill there; he learned that from you; what experience did he have?

A. Well, he was a miner first of all.

Q. A coal miner?

A. Yes; a miner; coal miner.

Q. Is there considerable similarity between the work of digging coal out of the ground and a rock miner?

A. I don't think there is a difference between the two.

Q. You say the reason you didn't make any attempt to operate that in '46 was because you could not find anyone to take Mr. Robinson's place?

A. That is right. I had letters from Mr. Robin-



(Testimony of John Phillip Zannaras.)

son that he was coming out of the Army and I thought I'd wait there.

Q. He got there in the middle of '47?

A. Correct.

Q. Now, in '47, in the spring, you didn't hire anyone because you were waiting for Mr. [112] Robinson?

A. Yes, sir.

Q. You do admit you could have hired someone in the pring of '47?

A. Probably, yes.

Q. Now, did you have a man working for you?

A. When?

Q. Up to the time Mr. Robinson left and at the time the deposition was taken?

A. Yes; I had him working for me.

Q. He was working for you all through '45?

A. Yes—oh, not all through '45.

Q. Why did you let him go?

A. He left.

Q. Why did he leave?

A. I don't know. Mr. Dickey took him.

Q. Did you pay him any salary?

A. I did.

Q. In any event, you had a man through the spring of '45 and at the time your deposition was taken in July, '45?

A. Yes; I had a man.

Q. Well, from May 15th, '45, until July, when this deposition was taken, what had you done toward putting the mill in operation?

A. Let's get straight on the dates. From what date? [113]

Q. From the time the water cleared up, as you say, in May, '45?

A. Yes.

(Testimony of John Phillip Zannaras.)

Q. Until July, 1945, what did you do to put your mill in operation?

A. We probably installed a new engine or something. I don't remember exactly.

Q. You mean the engine you had on your mill was not a good engine?

A. No, we put an auxiliary engine.

Q. What did you need an auxiliary engine for?

A. Because you got auxiliary engines in every mill. If one goes wrong you go to the other. At the time you overhaul one, you have the other.

Q. Mr. Robinson had already gone in the Army?

Mr. Cox: The time and place?

Mr. Wilmer: At the time we are talking about.

Mr. Cox: May 15th?

Mr. Wilmer: The time we are talking about.

Mr. Cox: I am just asking what time counsel is speaking of, May 15th.

Mr. Wilmer: It is very clear as to what we are talking about. For your information, we are talking about from May 15th to July. Mr. Robinson had already gone to the Army?

A. Yes, on May 20th, and left the place. [114]

Q. You then planned to go on without him?

A. Without replacing him?

Q. Yes.

A. If I could find a man to replace him.

Q. You had one.

A. That man was not Mr. Robinson's quality.

Q. All right. In any event, Mr. Robinson got there in the middle of the Summer of '47?

(Testimony of John Phillip Zannaras.)

A. That is right.

Q. And what did you say the first thing was you did then?

A. We built a laboratory.

Q. That was to test ores?

A. Yes.

Q. You were well satisfied you had a rich deposit of ore there, were you not?

A. Yes.

Q. Ample ore to go ahead and operate your mill?

A. Yes.

Q. Why didn't you go ahead and put your mill back in operation then?

A. Because Mr. Robinson wanted to be near his wife. He brought his wife from the other side and he wrote me a letter he wants to stay near his wife for a few months until she got used to the desert, so we decided to build a laboratory. [115]

Q. Was there anything to keep Mr. Robinson from staying at the mill and being near his wife, and you directing the operations at the mine? I mean there wasn't any need for Mr. Robinson, you could hire plenty of men?

A. I will tell you, a man and a wife and a girl coming from the other side and they are on the desert in Arizona is something different. I don't know whether you realize it or not. Mr. Robinson wanted to be near his wife and I justified him 100 per cent, I—remember, I make sacrifice to him to go ahead and build the laboratory, something we needed there.

Q. Your mine was about, say, eight miles away from your mill?

A. About ten miles.

Q. Was there any reason why you were afraid to go to the mine without Mr. Robinson being with

(Testimony of John Phillip Zannaras.)

you?           A. Went to the mine?

Q. Why couldn't he go to the mine?

A. He was at the mine.

Q. Why couldn't you run the mill?

A. Run the mill?

Q. Yes, why had the two of you to be together?

A. I couldn't run it myself alone.

Q. Why? [116]

A. Because it takes two men to run the mill.

Q. My goodness, gracious, you mean to say you couldn't hire anybody in '47 and '48?

A. Mr. Robinson had to stay with his wife and wouldn't mine, he wanted to stay with his wife, he didn't want to leave his wife.

Q. He lived in a house trailer?

A. No, they lived in a house.

Q. That was located where?

A. At the mine.

Q. Well, now, the thing I can't understand is why Mr. Robinson couldn't stay at the mine and direct operations there and you go to the mill and direct operations there.

A. Mr. Robinson had to stay at mine and he didn't like to get away from near the house. He got a wife and a boy.

Q. Well, the house isn't over 150 or 200 feet from the mine, is it?           A. It can't be helped.

Q. How far is it?           A. I'd say 600 feet.

Q. 600 feet of plain open country?

A. No, it isn't plain open country. You can't see eight yards by the mine. They got cedar trees.

(Testimony of John Phillip Zannaras.)

Q. Where did you build this laboratory? [117]

A. Right across from the house.

Q. At the mine? A. At the mine.

Q. So your reason for not doing anything, then, was because Mr. Robinson wanted to stay with his wife? A. Exactly.

Q. Then when did you get the mill back in shape for operation again? A. June 28th.

Q. When did you start putting it in shape?

A. Well, we started, I should say, well, during that time we were both working at the mine and at the mill, so from the time Mr. Robinson came, our work was divided at the mill or at the mine, I can't tell you exactly the dates at the mine, time at the mine.

Q. There came a time when you did go to the mill, is that right?

A. Yes, came a time after two months that Mrs Robinson got used to the place.

Q. Got used to the place?

A. That is right.

Q. And then you went and put the mill back in shape? A. Yes. [118]

Q. What did you do to put it in shape?

A. We overhauled it, everything.

Q. As I understand you, Mr. Zannaras, you put approximately ten or fifteen tons of ore through that mill? A. Yes.

Q. What had worn out?

A. Any machinery that stays six months, it has to be overhauled.



(Testimony of John Phillip Zannaras.)

Q. Tell me what you did?

A. First of all, we have to overhaul the engine there, we have to overhaul the concentrating tables; the feeder; the ball mill, all of that machinery have to be overhauled, and have to make new pads, overhaul the pump, engine out there, the pipes and valves, all of that machinery have to be looked over.

Q. This thing has a roof over it?

A. It does, yes. ?

Q. And closed on two sides?

A. Yes, one side—one side is closed, roof on top, and one side is.

Q. Then you say you got this mill in shape by June 28th? A. That is right.

Q. It took you from the middle of '47 to June of [119] '48 to build this little laboratory and to put your mill in shape again? A. Yes.

Q. How big is that laboratory?

A. Oh, it's about 20 by 25 feet, something like that.

Q. 20 by 25 feet?

A. Yes, it has got machinery in there.

Q. All right. Then you started your mill?

A. Yes, we start it.

Q. You couldn't get enough water? A. No.

Q. Are you familiar with the Kingman Crossing in Burro Creek? A. Well, familiar, yes.

Q. How did you go up to Bagdad when you say you went up to take these pictures?

A. Oh, we went through Bagdad.

(Testimony of John Phillip Zannaras.)

Q. You didn't go up the bed of the creek?

A. Oh, no, but we have been up there. We have not been at the ranch. Where we take pictures we have to take and follow the road down to the pumping station.

Q. At the time you went up to take the pictures at Bagdad that you have brought here, was there any water flowing at the Kingman Crossing above [120] your place?

A. We didn't go across that place.

Q. I didn't ask you that. Was water flowing at the Kingman Crossing?

A. There may be just a little bit flowing.

Q. How did it get there if it was dry up above?

A. There are some parts when there are some pockets of gravel and sand.

Q. Can you tell me, Mr. Zannaras, if at any time in the Summer of '48 there was less than four to six feet wide, three inch deep stream flowing at the Kingman Crossing?

A. Let's see——

Q. Four to six feet wide, and approximately three inches deep.

A. Had nothing in.

Q. Pardon?

A. No, it wasn't.

Q. Was there any water flowing there?

A. A little bit.

Mr. Cox: Where?

Mr. Wilmer: Kingman Crossing.

A. It is about three miles above my place, three miles above my place.

Q. As a matter of fact, Mr. Zannaras, above the

(Testimony of John Phillip Zannaras.)

Kingman Crossing up to Bagdad is rather a [121] sandy stretch there?

A. There is, appears there—there are pockets of sand and gravel.

Q. What I want to know is, looking at it, you see nothing but sand, that is right, isn't it?

A. Yes.

Q. Below Kingman Crossing and down to your place it becomes bedrock? A. More rock.

Q. Box Canyon? A. Yes.

Q. Now, the water comes up? A. Yes.

Q. Do I understand you to say that in the month of July, 1948, there was no water flowing into Burro Creek down by—where your sump is?

A. Slowly dripping. There is a little drip coming down.

Q. Very little?

A. About how wide, probably wasn't four or five inches wide.

Q. How wide would you say the stream was at that place at its widest point?

A. The stream? You mean the flow in the stream?

Q. I mean the water. [122]

A. Water standing in there, it wasn't more than four inches, I should say.

Q. Were there any large pools of water there?

A. Well, there are some very depleted pools, wasn't large pools.

Q. Would you say there was any as long as 30 or 40 feet long and five or six feet wide?

A. At that time there was at the back of those

(Testimony of John Phillip Zannaras.)

pools, there was a little bit of water but not very much.

Q. That was true through August, was it?

A. Correct.

Q. And September? A. And September.

Q. And October? A. Yes.

Q. And November? A. Yes.

Q. And December?

A. December 2nd is the time I noticed more water in Burro Creek.

Q. Up until December, the water——

A. Second.

Q. ——Second, the amount you say was four feet? A. It was varying.

Q. Varying. What do you mean by “varying,” how [123] much water there was?

A. Yes, sometimes come a little more water down and then stop again.

Q. Have any floods?

A. No floods, just very little water.

Q. Well, at any time between July, or the first of July, and the 2nd of December, was there more than a very slight trickle of water into Burro Creek down at your place?

A. Maybe sometimes, a little different.

Q. What do you mean by “a little different”?

A. What I am trying—you tried to be too technical. That water there, sometimes probably 4 inches, sometimes maybe 6 inches, sometimes 2 inches. It varies through the day.

Q. Two to six inches? A. That is right.

(Testimony of John Phillip Zannaras.)

Q. How deep?

A. Oh, it wasn't more than an eighth of an inch.

Q. Now, Mr. Zannaras, in your certificate which you received for the appropriation of three million gallons of water, prior to receiving that you filed certain sworn proof of appropriation with the State Water Commission, did you not?      A. Yes, sir.

Q. In which you said that you had at that [124] time put into beneficial use three million gallons of water per year?      A. That is right.

Q. Had you in the year preceding that, put into beneficial use three million gallons of water?

Mr. Cox: Just a moment. If this question is merely for general impeachment purposes of this witness there would be no objection, but if it is for the purpose of impeaching the findings of the State Water Department on the certificate of water right, we object. There is a method set up of attacking it after the certificate has been issued.

Mr. Wilmer: May it please the Court, we were not present at the time the certificate was granted and had no notice of what this man told the Commissioner and what the facts were which the Commissioner got.

The Court: All right, go ahead. We will have our afternoon recess.

(Thereupon a short recess was taken.)

(All parties as noted by the Clerk's record being present, the trial resumed as follows.)

Mr. Wilmer: What was the last question?



(Testimony of John Phillip Zannaras.)

(The last question was read by the reporter.)

The Witness: Preceding which year? [125]

Mr. Wilmer: At the time you filed your proof of appropriation.

The Witness: Yes, sir; I did.

Q. What did you use it for?

A. For mining purposes and domestic purposes.

Q. Well, that is about equivalent to 15 gallons a minute, isn't it? A. 15 gallons a minute?

Q. Yes. A. 8,000 gallons a day.

Q. Pardon? A. 8,000 gallons a day.

Q. 8,000 gallons a day. A. That is right.

Q. Now, what did you use 8,000 gallons of water for? A. We used it for the mine.

Q. Just tell me specifically what you used it for.

A. We have to wet the ore, we have to drink, we have to use it for machinery, hoist take that water.

Q. You mean the engine on the hoist?

A. Engine on the hoist and wetting ore and compressor and jackhammers and also for the mill and also for the house, otherwise you go—you [126] need water all the time.

Q. Well, the use of water in the house would be for drinking? A. Washing.

Q. Washing.

A. Washing the place, washing the house, cleaning the mill and all of that stuff, thousands of gallons.

Q. Thousands of gallons for cooking—

A. For mill and machinery.

Q. Let's take it one at a time. Now, the house.

(Testimony of John Phillip Zannaras.)

You had most of the time yourself and Mr. Robinson and several men?

A. I had five men once in there.

Q. How long did you have five men?

A. Well, I don't remember exactly, but I had four men and I had five men, and then I had most of the time myself, Robinson, and another customer on occasions, and my brother and other people come in there, sometimes four and five people.

Q. Well, that wouldn't make much of a dent in 8,000 gallons, would it?

A. That is not so, takes lots of water for that domestic purposes.

Q. Give me an estimate of how much you use for domestic purposes, would you? [127]

A. A day, you mean?

Q. Yes.

A. I should say probably 3,000 gallons.

Q. For drinking, washing the house, cooking?

A. Yes, and the mill and the houses——

Q. No, just stay with the house, I want to know your domestic—— A. Yes.

Q. How much would you say you use per day for domestic use? A. About 3,000 gallons.

Q. About 3,000 gallons, and so we understand what it is for, that is for drinking, for house purposes, such as cooking, taking a bath and washing your hands and face, cleaning up the house and what else? A. Cleaning the machinery.

Q. What machinery?

A. Washing machinery, washing trucks——

(Testimony of John Phillip Zannaras.)

Q. Just a minute.

Mr. Cox: Mr. Wilmer, may I ask are you directing his attention to the time before or after the certificate?

Mr. Wilmer: Before.

Mr. Cox: If it please the Court, we think this is immaterial. That certificate is conclusive [128] evidence unless it is attacked directly. The water code sets out——

The Court: I thought you had that in mind. I don't know whether that could be attacked collaterally or not, that question there. If he has made a previous inconsistent statement, it might go to his credibility in this case.

Mr. Wilmer: There was a recent, fairly recent case, your Honor——

The Court: I am going to admit it for this purpose. It may be admissible for the other, I don't know.

Q. (By Mr. Wilmer): I am referring now not to the machinery, not to your mill, Mr. Zannaras; I am referring only to your domestic use, household.

A. You wash houses and you wash machinery, too, sometimes clean up, that is what I had in mind.

Q. What machinery do you mean?

A. I have to wash floor of mill.

Q. No, now wait a minute. What I want to know is this——

A. Yes.

Q. For the purpose, the purpose of drinking, personal hygiene, washing yourself or taking a bath, and so on, cooking, washing the floor of the house, if you need to, washing dishes. [129]

(Testimony of John Phillip Zannaras.)

A. What about washing the mill?

Q. No, I am not interested in that.

A. All right.

Q. What I want to know is how much you used for the house, for the purposes I have stated.

A. Well, probably 2,000 gallons a day.

Q. For the purposes I stated?

A. That is right.

Q. All right. Now, you have some reference to washing the mill?      A. Yes.

Q. Just what do you mean by "washing the mill"?

A. Have to wash the floor.

Q. Every day?      A. Regularly.

Q. Even when you are not operating it?

A. We operate, but we are working that mill, we continuously work at the mill. Any time we are there we work at the mill.

Q. What do you do?

A. We install engines, we overhaul engines.

Q. I though you said that in 1942, the middle of the year, it was all ready to go, it was fixed up ready to go. Now, what do you have to wash out after that time at the mill?

A. Any time you work at the mill you have [130] to wash the floor of the mill.

Q. What do you have to do at the mill when you aren't running it and have it ready to go?

A. We work at the mill.

Q. What did you have to do?

A. We install some machinery.

(Testimony of John Phillip Zannaras.)

Q. Why did you install some machinery when your mill is ready to operate?

A. We are doing something all the time. We are checking on the pump when you are at the mill and you work, you put a hose on there and start washing all that stuff around, and you do it again the next day.

Q. Then, as I understand, Mr. Zannaras, every day you wash the floor of the mill out, every day with the hose?

A. It wasn't every day, but very regularly.

Q. How much water would it take to wash out the floor of the mill?

A. About a thousand gallons.

Q. About a thousand gallons?

A. About a thousand gallons.

Q. And how often would you say you washed it; every other day?

A. Well, sometimes maybe every day.

Q. 365 days a year? [131]

A. Well, not quite 365 days, we don't work Sundays.

Q. Other than that?

A. Yes, and sometimes maybe in town or something, but it is a part of—you are asking me a difficult question.

Q. Why do you have to keep the floor of the mill so clean? Is there anything about it that is going to germinate?

A. It needs washing.

Q. What I want to know is why you have to wash the floor every day. Do you eat off of it?



(Testimony of John Phillip Zannaras.)

A. You eat at your office, they wash your office, don't they?

Q. I don't wash my office every day or once a week or once a month either. Why do you have to have the floor of the mill washed every day or every other day, and why does it take a thousand gallons?

A. Because we have to clean the place, we work in there. There is oil and sometimes ore or other stuff accumulating that has to be removed by water.

Q. All right. In addition to that, you ran the mill, I believe you said, three or four test trials?

A. We run it more regularly. [132]

Q. Wait a minute. When did you say you ran the mill the first time?

A. The first time? Now, you see, when you run a mill you don't only run that ore. The first thing I did, I put the engine up and I started working the engine and to check the engine out, that takes water.

Q. What do you need water for that engine for?

A. To cool it down.

Q. That is the water you pour on the top which stays in there?

A. No, it doesn't, that is circulating water. It is continuous circulation of water going into the engine.

Q. Do I understand you, Mr. Zannaras, that this water which is run through the engine once and goes out in the ground.

A. Yes, it goes out in the ground.

Q. Pardon? A. It goes out in the ground.

Q. Why doesn't it circulate?

A. Because it is designed——

(Testimony of John Phillip Zannaras.)

Q. What kind of an engine is that?

A. It is a Western Engine.

Q. Western Engine? A. Yes. [133]

Q. It is designed so that you have a hose at the top and it runs out at the bottom? A. Yes.

Q. Is that the way it is designed to run?

A. You can make any design you want. That is the cooling system we have adopted there.

Q. What I want to know is this: This engine that is out there has a pulley that runs to your ball mill, is that right? A. There are two engines.

Q. The big one? A. A big and small one.

Q. The big one is installed so you have to run water through, so you can't circulate it?

A. The big one?

Q. Yes.

A. You can circulate it if you have constructions, but we don't need it. You can circulate the water or you can run the water through it, you have a choice.

Q. If you want to open a petcock at the bottom you can do it?

A. No; not a thing like that; that would have a spout. The question is you can circulate water by two ways; one, you can put the water to go through the engine and go out, the other one is, [134] you can have a tank to circulate the water, a cooling system to cool the water, and we have adopted the two systems whereby the water comes out in the ground.

Q. That is the economical way to use it?

(Testimony of John Phillip Zannaras.)

A. I don't say it is, but that is the best way we find.

Q. How much water would you run through an engine in 24 hours if you ran it 24 hours?

A. Oh, if you run water for 24 hours you run lots of water, sure. I can't tell you exactly.

Q. How many times in 1942 did you run that engine?      A. How many times?

Q. How many times?

A. It is difficult for me to remember; it is impossible.

Q. Once a week?      A. More.

Q. Twice a week?

A. I don't know by that.

Q. Mr. Zannaras, what I am trying to do is to try to find out how much you did run the engine.

A. Yes.

Q. You testified you used this water. I want to know what you used it for? [135]

A. You asked me a question impossible for me to remember. How can I remember ten years back if I run it four times, five or six times. I know we ran the engine and it took lots of water to go through the engine.

Q. How many thousand gallons a day would you run through the engine?

A. It is difficult for me to answer, but it is plenty water go through the engine.

Q. All right, what other uses do you make for water, Mr. Zannaras?

(Testimony of John Phillip Zannaras.)

A. We use water for the mine, for jackhammers and for the hoist, and for wetting ore.

Q. I mean, I am not familiar with it. Why do you use it in connection with the jackhammer?

A. You have to have water go through the jackhammer.

Q. To cool it?

A. In cooling it, and keeps the dust down.

Q. That is included in wetting the ore?

A. No; it does not wet the ore, wetting of ore is after it——

Q. How much water does it take a day to wet the ore in an operation like you have there?

A. Wet the ore? You take as much as—sometimes as much as a thousand gallons. [136]

Q. That is in the open shaft?

A. Yes; in the shaft.

Q. Now, that shaft is not a horizontal or a vertical shaft? A. No; it is incline.

Q. Incline shaft? A. Incline shaft.

Q. About what degrees?

A. About 70 degrees.

Q. It is sunk in solid rock?

A. No; it is not solid rock; it is fractured rock.

Q. Is it tight rock?

A. No; it is fractured; it does not hold water.

Q. Now, would you have to pour a thousand gallons of water down there?

A. To keep the dust out.

Q. A thousand gallons? A. Yes.

Q. That, of course, seeps on down through and

(Testimony of John Phillip Zannaras.)

wets it clear on down below?           A. No.

Q. What becomes of the water?

A. Evaporates or comes out with the ore that is taken out, evaporates most of the time or is taken out with the ore. [137]

Q. Mr. Zannaras, this shaft is a tube down in the ground into the fractured rock?

A. That is right.

Q. And it is set in an angle of approximately 75 degrees?           A. 70 degrees.

Q. And that is about—how big is it?

A. 10 by 8.

Q. 10 by 8, and you pour a thousand gallons in there and you say that that thousand gallons evaporates?

A. You put it on the ore. If you break the ore and pour the stuff in and it absorbs, that water, it will absorb it, and, of course, you have losses. Some of that will go down through cracks, through fractures, or some of that will keep down dust, and some of it will evaporate.

Q. How many days in the year '43, would you say you were running there?

A. Well, we mined considerable days, but I don't remember the exact number of days.

Q. Well, would you mine as much as 200 days a year?           A. I don't know.

Q. How long does it take an experienced miner to put down a foot of shaft? [138]

Mr. Lockwood: May it please the Court, I don't



(Testimony of John Phillip Zannaras.)

like to object, but I don't think the Court quite understood the nature——

The Court: I understood before you made your objection. I don't know whether that order of the Commissioner can be attacked collaterally. This is in for a different purpose. I have ruled on it once.

Mr. Cox: If this were immaterial it would be impeachment upon immaterial matter.

The Court: Well, we will see about that.

Q. (By Mr. Wilmer): How long does it take an experienced miner, Mr. Zannaras, to put down a foot of shaft in that type of formation?

A. It all depends on the facilities he has.

Q. You were pretty well set up for mining, were you?

A. Yes.

Q. You had good facilities?

A. Yes.

Q. You have approximately now how many feet of shaft?

A. About 50 to 60 feet.

Q. How long would an experienced miner, with good facilities, take to put down a shaft?

A. That wasn't put down in these [139] conditions. The conditions we put it down was different.

Q. You mean when you started you didn't have good facilities?

A. Well, we have to stop once and start again——

Q. I am not interested in that. How long would it take a miner with good facilities to put down a foot of shaft in that formation?

A. One man?

Q. Taking from good mining practices, what we call a foot.

(Testimony of John Phillip Zannaras.)

A. One man couldn't put down a shaft; he has to have a hoist; about three men at least to start a shaft like that.

Q. Well, when you were prepared to start your milling operation, you were already prepared to go, were you not?      A. Yes; worked three men.

Q. How long would it take three men working under normal conditions to put down a foot of that shaft?

A. Well, I should say—well, again, it depends on certain difficulties you may encounter in the ground.

Q. I am speaking of the formation there which you are very familiar with, I believe.

A. Yes, sir. Will probably take three [140] months.

Q. Will probably take three months to go a foot?

A. Not a foot; 50 feet.

Q. 50 feet?      A. Well, just about.

Q. 90 days to go 50 feet?      A. Yes.

Q. Now, what would you need to do to your mill there, Mr. Zannaras, to set it up for cyanidation?

A. Just put an agitator on the tank. We have a tank there.

Q. It is all set other than for that?

A. It is set in——

Q. I am asking you only about cyanidation first.

A. We have to put an agitator on the tank, zinc box, and a box for concentrating, zinc box for precipitating the gold.

Q. And for flotation, what would you have to do?

(Testimony of John Phillip Zannaras.)

A. Put flotation machines on, that is all.

Q. Put flotation machines on?

A. That is right, yes.

Q. Where would that be placed in your present setup?

A. It has a space for there provided for.

Q. Did you ever operate a cyanide plant?

A. No; I did not. [141]

Q. Did you ever work—operate a flotation plant?

A. No; I did not.

Q. The ore which you have exposed on this open cut on No. 19, Mr. Zannaras, have you ever had that assayed?

A. Yes.

Q. By whom? A. By the Ledoux.

Q. Mr. Ledoux? A. Yes.

Q. Where is that? A. New York.

Q. I mean, have you ever had it assayed by any local assayers?

A. No.

Q. The assay which you had made was from samples which you selected and sent to Mr. Ledoux?

A. I didn't select them. Mr. Gohring made the picking up of rock.

Q. Did you ever have any samples from your No. 28 shaft assayed locally?

A. I don't remember.

Q. Now, did I understand you to say that you had had considerable experience in setting up mills of this character for operation? [142]

A. I could put a mill up from engineering experience, yes.

(Testimony of John Phillip Zannaras.)

Q. Have you ever had experience in establishing and setting up a mill of this character before?

A. Which character?

Q. Like you have there at the Golden Rule or Gold Millsite.

A. Well, I had similar small plant in California.

Q. When? A. Back in '38, I think.

Q. You say a similar small plant. How big was that?

A. It was a different type of mill; it wasn't a ball mill. Grinding was different.

Q. Mr. Zannaras, the size of mesh in this mill that you have there, what size is that set for?

A. 10 mesh.

Q. 10 mesh? A. Yes.

Q. That is smaller than an inch, is that right?

A. Oh, yes; one-tenth of an inch.

Q. I mean the size of ore that it takes, is it a miner's inch and a half?

A. I don't get it. The size of which, of the classifying screen? [143]

Q. No; the size of the mill feed.

A. It runs as much as three and four inches. You can receive three- and four-inch ore.

Q. Would you say that you could put 50 tons of ore through that mill running sizes three and four inches?

A. That type of ore we have, yes, because it is soft.

Q. Now, do you know what a flow sheet is in a mill? A. What?

(Testimony of John Phillip Zannaras.)

Q. Flow sheet. A. Yes; I do.

Q. Isn't it customary, Mr. Zannaras, to ascertain the characteristics of your ore and were required to separate it from the rock before you set up a mill? A. Yes.

Q. The normal procedure is to find out through mill tests or milling and other plans what is needed for that particular ore? A. That is right.

Q. That was not done in this case?

A. It was.

Q. It was? A. Yes. [144]

Q. How was it done?

A. Well, it was done. I got a mill test from the American Cynamid Company. I got a mill test.

Q. You mean you sent a sample?

A. I sent a sample and I got a test.

Q. How big a sample?

A. Hundred pounds.

Q. And how was that selected?

A. That was the lowest we have, lowest grade ore.

Q. And on that one sample you set up your flow sheet?

A. Yes. The results were very plain that they can be concentrated by gravity process up to 80 per cent.

Mr. Wilmer: That is all.



(Testimony of John Phillip Zannaras.)

### Redirect Examination

By Mr. Cox:

Q. What type of diversion do you have for that water, Mr. Zannaras?

A. I have a pipe, suction type, into Burro Creek.

Q. Do you have an artificial sump there?

A. No; it is a natural sump.

Q. Now, after June 28th, was there any water in [145] your sump?      A. Yes; it was.

Q. Did you run the pump at any time after June 28th, 1948?      A. Yes; I did.

Q. When did you run it?

A. I ran it sometimes in September, in August, and in October.

Q. And was there sufficient water to run the pump?      A. No; there wasn't sufficient water.

Q. How long would the pump run?

A. Sometimes as long as—short as 10 minutes. In 10 minutes the suction—the foot valve will come out of the water and then the pump will draw air, and the pumping will stop.

Q. How close was your foot valve to the rock?

A. It was almost touching the rock, as close as possible.

Q. Was there any time between June 28th and December 2nd when there was sufficient water in the creek to run the pump normally?      A. No.

Q. You said it would take three men to operate

(Testimony of John Phillip Zannaras.)

in the shaft—two, I think you said, below and one above; three men lowering that shaft in one [146] day. How much can they remove in a day?

A. Working——

Q. Working with the present tools that you have.

A. Yes. Well, they could remove as much as—now, what is your question?

Q. How much lower can they lower the shaft in a day, three men working with your present tools?

A. I will say about a foot or something.

Q. I think you said it would take 90 days to—50 feet?

A. 50 feet; it would take about six inches—two days to a foot.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Cox: Call Mr. Seeds.

### ARTHUR J. SEEDS

was called as a witness on behalf of the plaintiffs, and, being first duly sworn, testified as follows:

### Direct Examination

By Mr. Cox:

Q. State your name.           A. Arthur J. Seeds.

Q. Where do you live, Mr. Seeds? [147]

A. Colton, California.

(Testimony of Arthur J. Seeds.)

Q. Have you ever lived anywhere near Burro Creek?      A. Yes, sir.

Q. Are you familiar with Burro Creek near the Bonanza Wash?      A. Yes, sir.

Q. How long have you lived around—did you live around that country?

A. Well, I have owned some mining property and been in and out of there since, I believe, the Fall of '35—'35.

Q. And do you still have any interests up in there?      A. Yes.

Q. What interests do you have; I mean, what do you have up there?      A. Two gold claims.

Q. How long have you been doing mining, Mr. Seeds?

A. Well, mining and prospecting about 30 years or better.

Q. When did you come to Arizona?

A. 1906.

Q. What kind of ore do you have on your claims up near Burro Creek?

A. It is gold ore. [148]

Q. What type of ore is it, free milling ore or concentrated ore?

A. Rather both. Parts of it is free and parts of it would be concentrating.

Q. How did you know what type of ore it is, how do you know?      A. How do I know?

Q. Yes.      A. By experience in mining it.

Q. Have you mined any of the ore from your claims?

(Testimony of Arthur J. Seeds.)

A. I have a lot of it mined there now on top of the ground. I have never sold any.

Q. Has there ever been a mill up in there other than before Mr. Zannaras?

A. A small one; a small mill.

Q. What type of mill was that?

A. Stamp.

Q. And where was it?

Mr. Wilmer: I am going to object to this as being immaterial, can't have any materiality here. The plaintiff has testified he would not do any custom milling, so what difference does it make?

Mr. Cox: This is just preliminary so far. During that time that you lived around Burro Creek, have you had an opportunity to observe Burro [149] Creek? A. Oh, yes.

Q. You are pretty familiar with the country around? A. Part of it.

Q. What was the occasion of your becoming acquainted with Burro Creek, Mr. Seeds?

A. Principally to get water. We had to haul it from there.

Q. Have you noticed any change in the flow on Burro Creek recently? A. Yes.

Q. And what was that change?

A. Well, it was considerably lower than I had ever known it to be before. The fact is at that point, I never knew the water to be that low.

Q. You recall when Bagdad put in a diversion or pumping plant up on Burro Creek?

A. About the time, yes.

(Testimony of Arthur J. Seeds.)

Q. Was there any change in the flow on Burro Creek after that, as before?

A. Well, it seems to me the water was a good deal lower, although after about 1944 I did not have the opportunity to observe it much because the water was not fit to drink and we quit hauling our water from there. Naturally, I was not there too often, from that time on, only occasionally. [150]

Q. After '44?

A. I think it was about that time, yes.

Q. Have you had any occasion to see the creek since then?      A. Oh, yes.

Q. Have you ever been anywhere near Mr. Zannaras' place?      A. Yes.

Q. When were you down there?

A. I was there the 17th of last October.

Q. What was the occasion of your going there?

A. Well, I went down principally to have a talk with Mr. Zannaras about milling my ore, because while it is good milling ore, it was not rich enough to haul it out and that is the only mill there was any ways close enough. I thought I could get it done, so I went down to see him about handling my ore.

Q. Did you at that time examine Mr. Zannaras' mill?      A. Oh, yes.

Q. What type of mill is it?

A. Well, it is a ball mill, concentrating tables, and an amalgamator.

Q. From your examination of the mill there, did



(Testimony of Arthur J. Seeds.)

you feel that the mill was capable of handling [151] your ore?

A. That is one of the reasons I went down to see if I felt that it was capable, and I think it is.

Q. You think it is?

A. I do. That is my opinion.

Q. Was there any reason that the mill could not handle your ore?

A. Not that I know of, outside of water.

Q. Where does Mr. Zannaras get his water?

A. From Burro Creek.

Q. And now, is Burro Creek—what is its nature; is it sand or going into what type of formation?

A. Well, there is bedrock close there at that point, bedrock is very close.

Q. Did you see Mr. Zannaras' diversion dam, or what he has there?      A. Yes.

Q. Would you describe that to the Judge and tell him what that is like?

A. Well, it is merely a sump in the bedrock, I would taken it to be, and it is at a point where the water would be most likely to collect in quantity. It has a pipeline running from the pump down there with a suction valve on the end, and one of Mr. Zannaras' excuses about handling the [152] water was because he didn't have—or to handle my ore, he didn't have sufficient amount of water, and he started the pump up and wanted me to time it in order to find out for sure that he didn't have the water.

Q. Did you see the pump operate?

(Testimony of Arthur J. Seeds.)

A. Yes, sir.

Q. And what happened when they started to pump, Mr. Seeds?

A. Well, it worked very nicely for about 45 minutes and then drew air down in that suction valve and it would not take any more water.

Q. Could the suction valve been lowered to take any more water, or how close was it to bedrock?

A. It was close enough down that if it had been any more water in there it would have got it. I don't know whether I made any particular measurement of it, but it was well down.

Q. Was there water flowing back into the sump rapidly at that time?      A. No; very slow——

Q. Did you happen to stay around and see how long it took to fill up, or anything?

A. Oh, probably a half hour or more; it had not filled up yet, filling up for the suction valve to operate again at that time. [153]

Q. You say you were around there a half hour?

A. Yes.

Q. Do you use any water now from Burro Creek at all?      A. No.

Q. Something was said about pollution. When did you stop using the water?

A. It was some time in '44, as I remember, when we quit getting water there.

Q. Where did you get your water at Burro Creek?      A. At the crossing.

Q. Up at——

A. At the crossing on the highway where we got

(Testimony of Arthur J. Seeds.)

our water at that time on account of better road to haul it.

Mr. Cox: If the Court please, there is one further question which I recognize is objectionable and the Court has ruled, but we would like—on the milling, but we would like to file just for the record that this witness, should it become material, would testify that he had ore available and that five dollars per ton would be a reasonable charge for the milling.

The Court: All right.

Mr. Cox: You may cross-examine. [154]

### Cross-Examination

By Mr. Wilmer:

Q. Mr. Seeds, how long have you known Mr. Zannaras?

A. Well, I have since probably around '40, somewhere there, '41.

Q. I believe you were at Prescott at the other trial as a witness? A. Huh?

Q. Were you at Prescott at the other trial as a witness? A. No.

Q. Weren't you there?

A. No; I wasn't there.

Q. Now, I believe you said that you are a prospector, is that right? A. Yes.

Q. And you are presently living in Colton, California? A. I live in Colton now.

Q. How long have you lived there?

(Testimony of Arthur J. Seeds.)

A. About three years.

Q. Do you spend much time in Arizona?

A. Well, I spend usually two or three weeks out of every three or four months now.

Q. And who is working your gold claim? [155]

A. No one.

Q. It is not being worked?

A. No; it is not being operated at the present time.

Q. When did you quit operating it?

A. I never did operate it except to do development work on it for my own personal benefit.

Q. About how much development work did you do?

A. Well, I don't know whether I could say, but I done a lot of it.

Q. Are you familiar, Mr. Seeds, with the crossing at what is commonly known as the Kingman Crossing at Burro Creek? A. Oh, yes.

Q. Did you cross the road there crossing Burro Creek when you were up there last October?

A. No.

Q. Did you cross at any time in the Summer of '48? A. No.

Q. Have you ever crossed it when you have not seen water running below the crossing?

A. Well, I don't think I have.

Mr. Wilmer: That is all.

Mr. Cox: That is all.

(The witness was excused.) [156]

Mr. Cox: Mr. Thompson.

C. A. THOMPSON

was called as a witness on behalf of the plaintiffs, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Cox:

Q. State your name. A. C. A. Thompson.

Q. And were you with Mr. Seeds on the occasion he spoke of going to Mr. Zannaras' place?

A. I was.

Q. Did you see Mr. Zannaras' pump there and the sump in Burro Creek?

A. Yes, sir; we saw it in operation.

Q. Did you observe as to how long the pump ran, when he started pumping?

A. Yes, sir; about 45 minutes.

Q. It ran about 45 minutes? A. Yes.

Q. And then what happened?

A. Well, it just quit pumping. The water was down below the suction valve.

Q. There was no water in that sump then?

A. There was no water in the sump for it [157] to get that would pick it up.

Q. Did you stay until it filled up?

A. We was around there about half an hour, I guess, before we finally left.

Q. Had it filled up then?

A. Not noticeably, no; not so the pump would pick it up.

Q. And what was the date of that?



(Testimony of C. A. Thompson.)

A. That was the 17th of October.

Q. How do you place that date?

A. Well, we were down there doing our development work and had talked it over and we went down, just as we said; we intended to see if we could get our milling done by Mr. Zannaras.

Mr. Cox: That is all.

Cross-Examination

By Mr. Wilmer:

Q. Was there any water down below the sump that you noticed?

A. Oh, there was very little.

Q. Did you go down the river, down the creek any distance below Mr. Zannaras' place?

A. No.

Q. You don't know whether there was any water running down there or not? [158]

A. No.

Mr. Wilmer: That is all.

Mr. Cox: That is all.

(The witness was excused.)

Mr. Cox: The plaintiffs rest.

Mr. Wilmer: I have one witness, if it please the Court, who is here from Tucson, and I'd like to call out of order. He will be very short.

DEFENDANT'S CASE

BENJAMIN P. JACOBS

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. Will you state your name, please?

A. My name is Benjamin P. Jacobs.

Q. What is your occupation? A. Assayer.

Q. Where is your office? A. In Tucson.

Q. How long have you been in that business?

A. I have been with my father for the past 20 years myself. [159]

Q. And, I believe, you do a great deal of assay work for all of the different large and small mine folks in the State, is that right?

Mr. Cox: We will admit Mr. Jacobs' qualifications.

Mr. Wilmer: Would you mark that for identification?

(The document was marked as Defendant's Exhibit A for identification.)

Q. (By Mr. Wilmer): Mr. Jacobs, prior to August 14, 1948, did you receive three samples, two of ore and one of concentrates, from the Bagdad Copper Corporation?

A. We received some samples marked that way. Whether they were concentrates, we don't know.

Q. They were mailed to you? A. Yes.

(Testimony of Benjamin P. Jacobs.)

Q. And you took those samples and assayed them? A. Yes.

Q. Showing you Defendant's Exhibit No. A for identification, will you state whether or not those were the results of the assay of those three samples?

A. That is correct.

Q. How large were the samples?

A. The samples were bulks averaging about a half pound. [160]

Q. I mean the aggregate of each sample was how much?

A. Each sample was approximately a half pound in weight.

Q. And in bulk?

A. Well, in bulk it was, oh, I'd say, a cup, was a regular teacup.

Q. Have you done quite a little bit of assay work, Mr. Jacobs? A. I have done it, yes.

Q. Are you familiar with what is known as commercial grade ore of tungsten and shelite in commercial quantities? A. Yes.

Q. These samples that you received, Mr. Jacobs, had been crushed?

A. Crushed and pulverized, they were finally pulverized.

Q. Two were labeled "ore" and one was labeled "concentrates"? A. That is right.

Q. And during August of '48, did you receive any other samples from the Bagdad for assay?

A. I don't remember; I don't think I have.

Q. What is regarded, or can you tell me, Mr.

(Testimony of Benjamin P. Jacobs.)

Jacobs, what is considered as tungsten in [161] commercial quantities, what percentage?

A. Well, that is a very complicated answer or question and I can't answer it because you have to take into account all the mining costs, milling costs, and the regular value of the ore itself once you get it.

Mr. Wilmer: Well, that is all. I don't intend to offer this at this time.

### Cross-Examination

By Mr. Cox:

Q. Is a cupful a sufficient amount to form any conclusion on, Mr. Jacobs?

A. A cupful—the sample of the analysis is taken according to the grade of ore, see?

Q. But, I mean, a cupful of material of any type having been analyzed would give no conclusion at all as to anything, the surroundings or anything else?

A. It all depends on how that cupful is selected; this sample can be representative so long as it is finely ground.

Q. The actual test of what the ore will run is only—comes after the sale of fairly sizeable quantities of ore, is that correct?

A. That is one way of looking at it. [162]

Q. I show you Plaintiffs' Exhibit 7 in evidence and ask you if you are familiar with similar sheets?

A. That is right.

(Testimony of Benjamin P. Jacobs.)

Q. Would you say that ore that contained that run would be profitable for milling?

A. In this case where the Metals Reserve was buying ore, it is a different case. They were, if I remember correctly, they were buying ore and giving the miner the benefit of many other expenses than their regular mine would pay.

Q. But on the percentage of ore, would you say that that ore was profitable ore?

A. For the Metals Reserve, for this settlement sheet, it would be all right. Now——

Q. Now, wait just a minute, Mr. Jacobs. Would you say that that ore would be profitable ore to mill?

A. I could not say. I could not say before making an examination of the recovery, a mill test.

Q. Mill test?           A. Yes.

Q. And if a mill test showed recovery at about 80 per cent, would it be profitable ore to mill?

A. You have to take into consideration the mining cost and other things. [163]

Q. Did you ever run any test for Mr. Zannaras?

A. I don't remember running it by that name. He may have sent us by another name, company name or something, but that name is not familiar to me.

Q. What would the mining costs have to be; how high would they have to be to make this type of ore unprofitable for milling?

A. Well, if this gave you \$36 a dry ton, so you



(Testimony of Benjamin P. Jacobs.)

got \$36 to play with. You can mine it for \$25 and make money.

Q. You mean if you spent \$25 for mining you could make money?

A. Yes; if you are going to sell it to the Metals Reserve, there is no other deduction for it.

Q. If it should appear that the mining cost was about \$6 a ton, would that appear to be very profitable ore?      A. Absolutely.

Q. And would that be the same if that ore ran down to one per cent instead of 1.92?      A. Yes.

Mr. Cox: That is all.

### Redirect Examination

By Mr. Wilmer:

Q. You mean that if you could mine for a [164] price of \$6 a ton and get the price the Metals Reserve was paying, that would be a good deal?

A. That is right. I was basing myself on what the Metals Reserve required per value per unit at that time, that the Metals Reserve was paying.

Q. They were giving many, or, rather, giving the miner the benefit of many——

A. Very much so. There weren't any penalties, where it is customary when you concentrate, say, if they penalize so much for copper and so much for lead. You have to analyze concentrates in order to sell them nowadays to big companies.

Q. In other words, it would be a pretty good deal for the miner to sell it to the Metals Reserve, rather than sell it to the smelters?      A. Yes.

(Testimony of Benjamin P. Jacobs.)

Recross-Examination

By Mr. Cox:

Q. The penalties are from either metals, you say, from copper and so forth?

A. Yes; they are at present.

Q. Now, the price of tungsten per unit has been unchanged up until the last ten or fifteen days, hasn't it?

A. Oh, no; oh, no; I think, if I am correct, if I remember right, the price that the Metals [165] Reserve was paying was either thirty or thirty-five dollars a unit.

Q. But recently it has been \$28.50?

A. No; not that I know of.

Q. What has it been?

A. Probably about 20 or 22. What you actually get the miner is one thing, and the quotation is another. Now, that is your basis. If I am an ore buyer, I buy tungsten ore here and I pay \$20, and if New York pays 25 over there, that is your basis.

Q. I am talking about concentrates having been milled.

A. There is no one who buys ore right now that I know of. There is a lot of people that buy tungsten concentrates running 60 per cent or better.

Q. On what basis do they pay for this?

A. They pay on the average of 20 or 22 dollars a unit, minus any penalties.

Q. Would that ore shown on that report, as-

(Testimony of Benjamin P. Jacobs.)

suming a one per cent ore and a mining cost of six dollars, would that be profitable at \$22.50?

A. Well, you have to figure, they are being very good if they recover 80 per cent of that, very good; they are doing very good at \$20 a unit. \$16 is what you are actually recovering and a cost of six dollars a ton to mine. Assuming it costs [166] six dollars, that would leave you \$10 for transportation and marketing of your concentrates.

Q. Still it would be a profitable proposition even at that? A. I suppose it would.

Mr. Cox: That is all.

Mr. Wilmer: That is all. May the witness be excused, your Honor?

The Court: Yes.

(The witness was excused.)

Mr. Wilmer: Mr. Dickey.

ERNEST R. DICKEY

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. Your name, please?

A. Ernest R. Dickey.

Q. You reside at Bagdad? A. Yes, sir.

Q. What is your connection with the Bagdad Copper Corporation? A. General manager.

Q. You are in charge of all of their operations at

(Testimony of Ernest R. Dickey.)

Bagdad, is that right? [167]                      A. Yes, sir.

Q. How long have you had that responsibility, Mr. Dickey?                      A. Since September 1st, 1944.

Q. And prior to that time, were you at Bagdad?

A. No, sir.

Q. That was when you took over, is that right?

A. Yes, sir.

Q. The management of the corporation?

A. That is right.

Q. I believe there was a complete new management at that time, is that right?                      A. Yes, sir.

Q. And it has been since you developed this open pit operation?                      A. Yes, sir.

Q. How long have you been engaged in the mining business, Ernest?

A. Well, I was born in mining districts, raised in mining districts, and I would say that truthfully I have been sort of working at various capacities ever since I left school.

Q. Did you do any particular studying toward—in the field of metallurgy or in mining?

A. I was continuously studying about six years during—from '24 to '30. I put in six years in [168] actual studying under engineers at Jerome on copper porphries and open pit method and other methods of mining.

Q. Then after that, Mr. Dickey, what responsibility have you had—particular mining experience have you had since then?

A. After that time I changed occupations and went to work for the United Verde Extension as

(Testimony of Ernest R. Dickey.)

Consulting Engineer until they was ready to close the mine down, because the ore reserves were exhausted.

Q. That was at Jerome?

A. At Jerome also. I went from there to the Vulture Mine out of Wickenburg. I was Consulting Engineer first for the U.V.X. They was interested in it for a year or two and then they gave it up and then I took a lease on it myself.

Q. How long did you stay with the United Verde as Consulting Engineer?      A. Two years.

Q. You were at the Vulture how long?

A. From '41 to '44.

Q. And you went from there to Bagdad?

A. Bagdad, that is right.

Q. You then have worked as Consulting Engineer in the active operation and management of mining [169] properties?      A. Yes, sir.

Q. How big an operation was it at the Vulture?

A. Requiring about 40 to 50 men, milling 250 to 300 tons a day.

Q. You supervised the entire operation?

A. Yes, sir.

Q. Now, at Bagdad, I believe, you said you have been there since '44?      A. Yes; September 1st.

Q. How many men do you have employed actively under you there?      A. About 250.

Q. Approximately what amount of ore do you handle there?      A. 3,000 tons a day.

Q. Now, with respect to the location of the mine



(Testimony of Ernest R. Dickey.)

at Bagdad, with respect to Boulder Creek and Copper Creek?      A. Yes, sir.

Q. Where is it situated?

A. Copper Creek is a small tributary that runs right through our property and joins in at Boulder Creek about three miles below the Bagdad Mine. Boulder Creek, then, in turn, runs into Burro Creek about three and one-half or four miles below the junction of Copper Creek, and just before [170] the Bagdad pick-up pump.

Q. Those streams run in generally a southwesterly direction?

A. Mostly west from Bagdad to Boulder and from Boulder it may run a little more further.

Q. They ultimately feed into the Big Sandy and Bill Williams?

A. Yes, sir; into the Big Sandy and Bill Williams.

Q. The creek you referred to as Copper Creek, is that a running stream at any time?

A. No, sir.

Q. It is a dry wash?      A. Yes, sir.

Q. Has no headwaters other than drainage and rainfall?      A. During stormy weather, yes, sir.

Q. After you came to the Bagdad in September, 1944, Mr. Dickey, I think you rearranged the disposal of tailings, is that correct?      A. Yes, sir.

Q. And likewise, rearranged to some extent the method of securing water for mining, is that right?

A. Well, you might state it that way, if I may be allowed to explain. The prior management, [171]

(Testimony of Ernest R. Dickey.)

in designing the plant and the disposal of tailings, installed a large seven-inch trestle line three and one-half miles downstream and ran the tailings from the mill to that point and stored them on the bank of Boulder Creek. It was a costly operation to keep the pipeline maintained, to keep it from breaking down, also there wasn't a chance of reclaiming any water. At that time we was interested in reclaiming all the mill water possible, because there wasn't any saving in re-agents at the same time other than in having to pump water from Burro Creek seven and one-half miles. Therefore, we began construction of a tailings pond right at the millsite within twelve or fifteen hundred feet, and from that date on we have continued to store our tailings right at the property at the millsite.

Q. Would you, if you could, give us a little better picture of it, Mr. Dickey, and draw here relatively accurate, if you can, Copper Creek, Boulder Creek and Burro Creek?

A. Boy, I am not an artist. (The witness complies.)

Q. (By Mr. Wilmer): The square that you have drawn there represents approximately the Bagdad property? [172]

A. Yes, sir. This little tributary there represents Moroney Gulch. That is a small gulch here that has a total length of approximately two miles, and it is in this gulch that we built a tailings dam.

Q. In other words, you dammed the mouth of Moroney Gulch into Copper Creek?

(Testimony of Ernest R. Dickey.)

A. Yes, sir.

Q. The mill and the balance of your operation there lay on which side of Copper Creek, then?

A. Right in here (indicating on diagram). That would be the mill, approximately, and the open pit area is across the creek.

Q. Across Copper Creek?

A. Eventually the pit will extend across the Creek, of course, because up here it is across the creek. Right now the mill is on the south side of Copper Creek.

Q. In placing of that dam across Moroney Gulch, you call it?      A. Yes.

Q. Approximately what amount of material was moved in there?      A. Two million yards.

Q. And it was approximately that time when you started to make this change that you heard [173] from Mr. Zannaras? Is that right?      A. Yes.

Q. Now, Mr. Dickey, showing you Plaintiffs' 4 for identification, which appears to be a picture of the tailings pond?      A. Yes, sir.

Q. Which end of the tailings pond is that?

A. Its upper end—that is looking at it about south—a little west of south from up on the road going out of camp. The dam is down here to our right, down in a narrow neck, right in here, and this would be tailings, the rest of this is all water (indicating on photograph).

Q. The way you have that arrangement there, I believe, Mr. Dickey, the tailings now are run directly from the mill and are dammed behind this dam?

(Testimony of Ernest R. Dickey.)

A. Yes, sir.

Q. What do you then use the water for?

A. We use the water over and over in the mill for our milling operations.

Q. You mean that the tailings are such that you can pump water back out and use it in your mill there?

A. As the tailings go into the dam, they go in there with approximately 30 per cent solids, [174] the balance being water, and after it sets in the pond awhile, the tailings settle and it leaves clear water for us to use over again.

Q. In other words, you keep circulating your water which is supplemented by fresh water from Burro Creek, is that right?      A. Correct, sir.

Q. Do you know approximately how many gallons of water per year you use out of the tailing pond?

A. Oh, 60 to 80 million gallons. Approximately a million gallons a day that we recirculate and use over and over.

Q. Approximately how many gallons of fresh water do you require per day, or do you have per day?

A. Well, let's see, the maximum we can take, if I may state it that way, is about 600 gallons a minute if the pumps are working at full capacity and full efficiency, and I believe if we was operating the pumps 24 hours a day, it would pump in the neighborhood of 300 million gallons, but from our calculations where we don't use meters or anything of



(Testimony of Ernest R. Dickey.)

that type around the plant, it is conservative to say that we don't use over five or six hundred thousand gallons of fresh water a day, of which 100,000 gallons is set aside for [175] domestic purposes.

Q. I believe in the camp at Bagdad there, there are quite a number of residents?

A. Yes, sir.

Q. Quite a number of families live there?

A. Yes, sir.

Q. Are they supplied with domestic water?

A. Yes, sir.

Q. Is there any charge made for that?

A. No, sir.

Q. The entire use of water which is gotten from Burro Creek for domestic purposes is solely, then, for the domestic use of the miners and people working at the mine; that is, the executives?

A. Solely used, you say?

Q. What other use does it have?

A. We have to add fresh water to our milling circuit, and it requires probably in the neighborhood of 400 to 500 thousand gallons a day, at the maximum, because at our tailing pond there is an enormous amount of evaporation that has to be replenished.

Q. Plus other losses in the milling process?

A. Yes, sir.

Q. Now, Mr. Dickey, I believe that in the summer of '48, last year, you learned of some [176] complaint which Mr. Zannaras had with respect to water at his mill, did you?

A. Yes, sir.



(Testimony of Ernest R. Dickey.)

Q. What did you do?

A. Well, naturally being interested in our district on the various items, especially on sanitation, I traveled around to see what the conditions are, and having heard about this complaint that there was no water at the Zannaras Millsite, I asked Mr. George Green to accompany me and we took a trip down to the Zannaras Mine, and we drove up to the camp and it didn't seem to be anyone there. We went over to the house and knocked on the door and a lady came to the door. I introduced myself and Mr. Green and told her who we were and why we were there, and that we would like to visit with Mr. Zannaras, and she said that they were in town, had been for two or three days. I asked her if it would be all right with her if we looked the property over and go down to the mill and look it over and take pictures of whatever was necessary. She says to go right ahead, so we did. We looked the mine over, and I had seen it on previous occasions, I could not honestly say that I have seen it put into actual development. [177]

Q. When had you seen it previously, Mr. Dickey?

A. Well, that is going to be hard to say for sure. Probably before that, or about a year and a half before that I drove over there, then another time was back in '44, and I inspected the property. The property is developed, if I might continue, by a shaft, which is now probably 45 or 50 feet deep, timbered, and has a small hoist, I didn't pay par-

(Testimony of Ernest R. Dickey.)

ticular attention, but I think it is about a 15 horse power Fairbanks Morse hoist; has an Ingersoll Rand Compressor, probably 210 cubic foot compressor, and skids, has a frame over the shaft and has a mine car, a trestle for the mine car to take the ore out and dump it into a truck. He has some other things and a little camp there. I notice they have built a new building there which I took it that is their laboratory.

Q. That was when?

A. July, if I may look at my notebook.

Q. Sure.

A. Because I wrote a lot of these things down as I go.

Mr. Cox: May I ask the question, Mr. Dickey: You have independent recollection of the day, or will the information in your notebook be the best [178] information?

A. Well, I have a recollection, I believe it is around about the end of July, 27th or 28th, but I just want to be sure.

Q. You made notes at the time?

A. Yes, sir; July 27th is right.

Q. (By Mr. Wilmer): Mr. Green is connected with the Company, is he?

A. He is our mill superintendent.

Q. In the years of experience that you have had, Mr. Dickey, has it become rather necessary that you get acquainted with water flows and judging the amount of water running in a given stream?

A. Very much so.

(Testimony of Ernest R. Dickey.)

Q. Have you had experience along those lines?

A. Yes, sir.

Q. In any particular respect?

A. Well, I might state one particular respect. It has to do with a water right that my mother owns up in the Walapai Mountains. The railroad was contesting us on that water right, and we didn't have any specific information as to the exact amount of gallonage that the spring would make or would flow down creek, and we estimated it, and that was my job, and we applied for the [179] water that was being used there, and as it came out, why, evidently my estimate was very close. Another instance right here at Bagdad. We have seepage that runs out from under our tailings dam. I had estimated that that seepage amounted to 80 gallons a minute flowing down Copper Creek. We had some discussion with other parties there about that quantity of water, so a weir box was installed to measure the water, and we measured the water, and it was 84 gallons a minute, so I don't figure I missed too far.

Q. Did you go down to the Burro Creek down below the Zannaras Mill?      A. Yes, sir.

Q. And for the purposes, I take it, of seeing what the water situation was?      A. Yes, sir.

Q. Did you find what the situation there was?

A. I did, sir.

Q. What did you find?

A. Well, I was surprised that——

Mr. Cox: Just a moment, just tell what you saw there.

(Testimony of Ernest R. Dickey.)

A. Okay. I was going to try to. I was surprised that there was water there, because of all the things I had heard that the place was dry, and [180] naturally, we took pictures of it which I expect you have there. The creek coming into this Zannaras Millsite is filled with boulders, large boulders, gravel. It is hard to determine how much water would be running under the surface of the creek channel, and we examined the intake at the pump. He has a two-inch pipe intake foot valve. The pipe hangs into a depression among the boulders there into the water, and on below that, oh, just a matter of a foot—you might say a few feet, up to three or four hundred feet, there was quite large bodies of water. There was a considerable flow running out of those pools, so evidently the water was coming into those pools there. I had estimated at that time about a hundred gallons a minute.

Mr. Cox: That is not an answer to the previous question, I don't think, and I will ask it be stricken.

The Court: What part is that?

Mr. Cox: Where he says what his estimate is. He is now attempting to give his estimate.

Mr. Wilmer: Let's strike that.

The Court: All right.

Mr. Cox: All right.

Q. (By Mr. Wilmer): Mr. Dickey, would you be able [181] to estimate the amount of the flow of water flowing into the channel there; that is, the amount of water flowing as distinguished from the water standing in the pools?



(Testimony of Ernest R. Dickey.)

A. The only way you could tell that is by the water flowing out of the pools.

Q. Did you observe that? A. Yes, sir.

Q. What did you observe?

A. About 100 gallons a minute——

Mr. Cox: Just a moment. Are you asking for an observation? I'd like to ask a question on voir dire.

Q. Mr. Dickey, your two experiences with estimating the flow of water were on your mother's place, and you say that you evidently came out fairly close there. The other time was when you estimated that it was 80 gallons per minute when it was 84? A. Correct.

Q. And those were two times?

A. I was not asked how many times I had made estimates. I was asked to give an illustration.

Q. Now, is this estimate based upon that knowledge?

A. Yes, and from knowledge I have gained over [182] my years of experience.

Q. What other basis do you have for estimating that, Mr. Dickey?

A. Well, sir, I have been connected with mines in this country for a good many years, and we have the problem of taking water out of most mines. We have to put in our pumps, pump the water out, and most of the time it runs out to waste and it is very easy there. We know. We put in a pump at the hundred gallons a minute and we can see that water running down the creek or hillside, and we know



(Testimony of Ernest R. Dickey.)

what we are doing, and in other cases may be smaller or larger amounts.

Q. And how much experience—how many times have you observed that condition, Mr. Dickey?

A. At Burro Creek?

Q. No, the estimate, I am just trying to get your experience.

A. Oh, goodness gracious, that is something hard to say. It would be just a wild guess. Numerous times.

Q. Did your engineering experience help you in that, too?      A. Yes, sir.

Q. Are you acting as an engineer at Bagdad in any way? [183]

A. No, sir, I am the general manager over all operations.

Q. In estimating the water, it is commonly——

A. In gallons or in——

Q. I just say, how much in volume?

A. I don't even remember now. I am going to just let you have that one.

Q. You don't know how many gallons it is?

A. No, I won't say because it has not been very long I looked it up, but it sure slipped my mind.

Q. That is the usual miner's measurement of water?      A. Correct.

Q. But your experience is all based on your——

A. The size of the flow, yes, sir.

Mr. Cox: That is all—I have one more question.

Q. Are you, or have you ever been registered

(Testimony of Ernest R. Dickey.)

under the technical Arizona State Technical Registration Act?           A. No, sir.

Mr. Wilmer: Is that all?

Mr. Cox: That is all.

Q. (By Mr. Wilmer): Now, Mr. Dickey, so that Mr. Cox can have the benefit of your experience, how [184] much of a volume of flow of water does that amount to? In other words, could you tell me approximately how wide or how deep the stream of water was that was moving out of the pool?

A. In this particular instance, the water running out of the pool down below Zannaras millsite was a space there of about 20 to 22 inches wide, oh, probably an inch deep.

Q. I show you Defendant's No. E for identification. I notice there is some printing on the back of that?           A. Yes, sir.

Q. Was that put on there by someone; I mean did you put it on there?

A. I wrote this on here, yes, sir.

Q. That simply states the direction from which you were standing and the view that is shown on the face of the picture?           A. Yes, sir.

Q. Was that taken at that time?

A. Yes, sir.

Q. And does that accurately show the water that was there in that sump or the vicinity?

A. In the creek just below the pump suction.

Q. Since the pictures are a little bit confusing, Mr. Dickey, can you tell us approximately how long [185] that pool of water is that is laying there?

(Testimony of Ernest R. Dickey.)

A. Well, there is more than one pool. You can see here. The pool comes together here and it starts out again and goes in by the brush there. In all, I would say the picture there covers up about 100 yards of area, has water pools on it.

Q. Do you know how deep it was?

A. No, I wouldn't say for sure. Some places three to four feet, I know.

(Thereupon documents were marked as Defendant's Exhibits B, C, D and E and F and G for identification.)

The Court: The Court will suspend at recess until 10:00 o'clock tomorrow morning.

(Thereupon a recess was taken at 5:00 p.m.) [186]

10:00 A.M., March 4, 1949

All parties as heretofore noted being present, the trial resumed as follows:

Mr. Wilmer: To get the record straight, we offer at this time Defendant's Exhibit E in evidence.

The Court: Any objection?

Mr. Cox: No objection.

(Thereupon the document was received and marked as Defendant's Exhibit E in evidence.)

ERNEST R. DICKEY

resumed the witness stand and testified further as follows:

Direct Examination

(Resumed)

By Mr. Wilmer:

Q. Mr. Dickey, I hand you Defendant's B for identification, and also a picture. Will you state whether or not that was taken on the 27th of July of the creek below Mr. Zannaras' mill and at or near his point of diversion?

A. Yes, sir; it was.

Q. Who is that standing in the picture?

A. George Green.

Q. Now, Mr. Dickey, that is looking in [187] which direction up or downstream?

A. This is looking downstream, George Green is standing at the intake, pump suction.

Mr. Wilmer: We offer Defendant's Exhibit B for identification in evidence.

Mr. Cox: No objection.

(Thereupon the document was marked as Defendant's Exhibit B in evidence.)

Q. (By Mr. Wilmer): Mr. Dickey, can you estimate the approximate amount of water that in your opinion was in that one pool?

A. In which pool, now?

Q. The pool which is beyond George Green.

A. Downstream from the suction——

Mr. Cox: Just a moment. You mean the pool shown in the picture?

(Testimony of Ernest R. Dickey.)

Mr. Wilmer: The pool shown in Defendant's B in evidence.

Mr. Cox: On voir dire.

Q. This is, you say, taken from the point of diversion?

A. No, Mr. Green is standing at the suction.

Q. And then——

A. Looking downstream.

Q. Looking downstream, and these pools shown downstream, you said the other picture was taken [188] about 30 feet downstream, E.

A. I'd have to look at the picture again and see (looking at photograph). No, not this one. This one (indicating picture), I was standing right here on this rock beside this suction. Here is the same stick here, only I am standing over on this way——

Mr. Wilmer: Might I say, Mr. Cox, that on the back of each of these pictures is the point at which it was taken, the position.

Mr. Cox: The picture, then, of these pools down here are shown in E?

A. Yes, sir.

Q. That is a close-up of these pools?

A. Yes, sir.

Q. And did you put anything in the—shown in E, the dry places or sand that is up above the pools?

A. No, that is vegetation.

Q. Vegetation? A. Yes, sir.

Q. And the water shows the reflection, places where there isn't that reflection, is that vegetation?

A. Well, I wouldn't say for sure all of that.



(Testimony of Ernest R. Dickey.)

These darker spots like this area is vegetation. [189]  
This is clear water. Over here, this would be clear water in between vegetation. This is where the light would be reflected on the pond as the kodak took the picture.

Q. This is not water here?

A. That is vegetation growing in the water, moss and other algae, and so forth.

Q. And the same on down——

A. That would be true, yes, sir.

Q. Did you measure these pools?

A. No, sir.

Q. Did you measure the depth of the pools of the width of the pools or the length of the pools?

A. No, sir.

Mr. Cox: We object to the question, as there is no basis for estimating the pool of water by looking at the surface of it unless you have had some determination of the depth, width and the size of it.

The Court: Ask him whether he has any such determination.

Mr. Cox: He just said—Oh, did you make any determination of it?

A. Yes, sir.

Q. How? [190]

A. Oh, the same way if someone was to ask me the question of what would be the dimensions of this room. I would make an estimate as to the size.

Q. Now I believe you are speaking now as an engineer?

A. Well, from practical experience, sir.

Q. In the room you can see the length, depth

(Testimony of Ernest R. Dickey.)

and width, can you not?           A. Correct, sir.

Q. Is that true in a body of water?

A. I would say I could see the width and the length and in places where the water was clear I could see the bottom.

Q. Now, where you can see the bottom of a pool, can you tell how far it is by having clear water?

A. Estimate it; I wouldn't know.

Q. With what degree of accuracy, Mr. Dickey?

A. Oh, I would say within 75 per cent. It depends on the depth of the water. Shallow water would be more easy to estimate correctly than deeper water.

Q. This is all below the point of diversion we are speaking of now?

A. This particular pool we are talking about yes, [191] sir.

Mr. Cox: The same objection.

The Court: He may answer.

A. I would estimate that that pool had not less than 60,000, probably not more than 100,000 gallons of water.

Q. And that pool, Mr. Dickey, is immediately adjacent to the point of diversion of Mr. Zannaras'—below it?           A. Yes, sir.

Q. Now, did you observe the point of diversion which Mr. Zannaras has; that is, did you take a picture, I should say of that intake that he has there?

A. Yes, sir.

Q. Is that reflected in Defendant's D for identification?           A. Yes, sir. This is the suction.

(Testimony of Ernest R. Dickey.)

Q. And with respect to that same manner, does Defendant's C for identification reflect Mr. Green standing and looking down at the diversion—the point of diversion? A. Yes, sir.

Mr. Wilmer: We offer Defendant's D and C for identification in evidence.

Mr. Cox: No objection to Defendant's D. [192]

(Thereupon the document was received and marked as Defendant's Exhibit D in evidence.)

Mr. Cox: On voir dire.

Q. On Defendant's C, you took the picture upstream? A. Correct.

Mr. Cox: No objection.

(Thereupon the document was received and marked as Defendant's Exhibit C in evidence.)

Mr. Wilmer: Mr. Dickey, in good mining practice, what is the usual method for setting up a point of diversion when you are seeking water or drawing water out of a stream of this character; what, generally, do you do with respect to providing a sump or other place to provide for the water to accumulate?

A. In good mining practice, I would say that very seldom, unless the water is constant and clear, would they pump out of a stream direct. They would construct or dig a suction hole or sump beside the stream and let the water filter through gravels into this sump and the suction would be put into that sump hole and the water pumped directly from that.

(Testimony of Ernest R. Dickey.)

Q. How much expenditure or work would be involved to change the set-up of Mr. Zannaras' place [193] there to give him a reasonably efficient suction arrangement which would secure for him any water which was coming down the stream?

A. From my observations, the creek bottom, as the pictures will substantiate, is filled with gravels and boulders of various sizes up to enormous sizes, and it would be really hard to say definitely how deep a person would have to dig that hole to get to the water channel or on bedrock, but I would make an estimate that a sump hole dug beside the stream 10 or 12 feet deep would give him ample water supply and would not be endangered by the normal water flows from the creek. The only time it could harm him in any way would be high water flow, such as it would then fill up the hole and it would have to be cleaned out again.

Q. Now, Mr. Dickey, in the summer of '48, did you have occasion to use the crossing known as the Kingman Crossing on Burro Creek?

A. Yes, sir.

Q. What was the occasion for that?

A. I had to take our construction superintendent to Kingman to look over a building that we had purchased at the Kingman Air Field preparatory to dismantling and moving it to Bagdad. [194] The fact of the matter, it was cheaper. We took the Burro Creek Road, which we call the Kingman cut-off, because that saves about a hundred miles. On

(Testimony of Ernest R. Dickey.)

that particular day, it was July 16th. When we crossed Burro Creek at the Kingman Crossing, there was about four inches of water flowing at that crossing. The water in the ruts, where the cars had traveled back and forth, the water was somewhat deeper, I would say from recollection, probably 10 inches deep, but that would just be——

Q. Standing water?

A. Standing water, yes, sir.

Q. This four inches of flowing water that you observed, where was that with respect to the crossing itself?

A. On the downstream side.

Q. How close to it?

A. Oh, within eight or ten feet where the tracks of the road would be.

Q. Now, how wide was that flowing stream?

A. I would estimate it at about four to six feet. Now, it is very hard to give you a definite, accurate answer, because there is rocks and boulders and stuff like that in along the area there, and the stream was actually with water running somewhat wider than that and in places [195] maybe somewhat deeper, and in other places a good deal more shallow.

Q. As a matter of fact, Mr. Dickey, is there a place below the Bagdad sump where the Burro Creek disappears entirely in a dry year?

A. Right at the sump where we pump our water out on the downstream side is gravel. We have not determined how deep that gravel is yet, and the water, at low dry seasons, disappears from the sur-



(Testimony of Ernest R. Dickey.)

face into that gravel and again reappears downstream about two to three hundred yards below the pump, at which time—at which place, I had better say, I have never seen the creek dry.

Q. Referring now to Plaintiffs' 2, 5 and 6 in evidence, which appear to be pictures of the Bagdad sump——

A. Yes, sir.

Q. ——will you state whether or not at that time, Mr. Dickey, two to three hundred yards below that, Burro Creek reappeared on the surface as a flowing stream?

A. Yes, sir.

Q. On below was the sump?

A. Yes, sir. This is gravel, which would tell you about where the water disappears.

Q. When you say "this," you are referring to [196] the picture in the foreground of Plaintiffs' 6?

A. Yes. That is downstream from our suction pump there.

Q. Now, further down Burro Creek and above the Kingman cut-off Crossing, does the Burro Creek again disappear?

A. Yes, sir.

Q. Where does it reappear?

A. Well, two or three different observations I have made at various times since I have been at Bagdad, one time was walking the full distance through to the ranch, which is a couple of miles below, the water appeared, as I stated before to be, oh, from two to three hundred yards below our pump intake. It reappeared there and runs there for a distance of about a quarter of a mile, then disappears

(Testimony of Ernest R. Dickey.)

again, and this particular time I am stating was about the driest season that I know of, and the water just then seemed to just show in small shallow pools at various points along the creek to quite some distance below the ranch, and there wasn't any water at the ranch running on the surface at that time. Above the Kingman Crossing a quarter of a mile, quite a substantial flow of water appeared again and ran all the way across the Kingman Crossing and on [197] down below Kingman Crossing, went on down about a half a mile, and the canyon becomes solid rock and very little gravel and boulders in it in comparison to what it was above the Kingman Crossing, which appeared to be quite a volume of water, deep holes.

Mr. Cox: Could I fix the date of this time? I didn't quite——

Q. (By Mr. Wilmer): Do you recall when it was that you made this trip down the canyon?

A. It was in the summer of '47, which was really our driest year.

Q. Was '47 drier than '48? A. Yes, sir.

Q. That is from the standpoint of rainfall?

A. Yes, sir.

Q. I take it, Mr. Dickey, that through the summer particularly you were somewhat concerned with your water supply, and that is one of your reasons for observing the creeks pretty closely?

A. Yes, sir.

Q. Did you have any further occasion to use Kingman Crossing through the summer of '48 or

(Testimony of Ernest R. Dickey.)

spring of '48?           A. No, I didn't.

Q. Now, Mr. Dickey, in August of '48, in [198] co-operation with the Reclamation Service, did you have occasion to put a gauge in Burro Creek?

A. Yes, sir.

Q. Where was that gauge placed?

A. Placed in the pool that we pump out of on Burro Creek.

Q. And under whose direction was it placed?

A. By Mr. Kaser from the Bureau of Reclamation, and under the immediate supervision of Mr. Deacon, who is a representative and does the recording of the rainfall, and so forth, for that district.

Q. I believe, for a good number of years there has been a Weather Bureau station at Bagdad, is that right?           A. Yes, sir.

Q. And Mr. Deacon has been the observer for the Water Bureau, is that right?

A. Not all of the time.

Q. In the recent years, though, I will put it that way?           A. Yes, sir.

Q. How was this placed in Burro Creek, Mr. Dickey?

A. The gauge was placed so that the zero level of the water as it flowed out of this pool, [199] in other words, at zero, there wouldn't be any water flowing out of the pool on the surface.

Q. And that was placed in there at approximately what time, do you recall; do you remember the date?

(Testimony of Ernest R. Dickey.)

A. It was placed in about the middle of August, surveyed or cross-sections made until the first of October.

Q. What was done with respect to determining how the gauge should be read with respect to the amount of water moving in the creek bed?

A. Our engineering department made the surveys and the cross-sections as to widths and depth of the creek at that point, at the gauge, and from those surveys the Bureau of Reclamation prepared the chart showing the actual amount of water flowing on the surface.

Q. Were those computations made at or in Arizona?

A. I don't believe they were. I wouldn't say for sure.

Q. Do you know who those readings were——

A. Sir?

Q. The survey readings were sent to somebody?

A. Yes, sir, Mr. Kaser.

Q. Was Mr. Kaser himself personally at the [200] mine on August 10th or 11th, '48?

A. Well, at about that time he was there to observe the creek and to give instructions in the setting of the gauge.

Q. Did you go with him down to the creek?

A. No.

Q. You don't know what his actual observations were there?

A. No, sir. Mr. Deacon went in my place.

Q. All right. Now, Mr. Dickey, I believe that on



(Testimony of Ernest R. Dickey.)

one or two occasions you have observed the mill which Mr. Zannaras has set up there at the mouth of Bonanza and Burro Creeks?      A. Yes, sir.

Q. How recently did you look at it?

A. Last Sunday.

Q. Did you form any opinion, Mr. Dickey, as to whether or not it was economically feasible to operate that mill?      A. I would say no.

Q. Why?

A. It would be necessary from a good milling practice to make further installations of the equipment necessary to make that mill operate efficiently on a steady basis.

Q. What do you mean; what is wrong? [201]

A. One of the main things that I observed is that it is necessary that they have a classifier run in close circuit with the ball mill.

Q. Why is that necessary, Mr. Dickey?

A. The ore is fed to a ball mill at various sizes, as Mr. Zannaras stated yesterday, up to probably four inches. As that ore is fed into the mill, a portion of it is ground to the desired fineness, and other ores are not ground to a desired fineness. Therefore, as it is discharged from the mill it should be returned to the mill by some means. A classifier performs that duty.

Q. In other words, under the present set-up it would either be thrown away or would be manually returned, is that right?

A. Yes, sir. Further, when you do not have a classifier of some design to do that part of the job,



(Testimony of Ernest R. Dickey.)

it is very hard to have complete control over the operation, and in milling practice it is very necessary that we have a constant feed into the mill and constant regulation of the flow through the various processes in the mill so that you can set whatever is necessary. Like in his particular mill, to make a proper concentration on a table, you must maintain constant feed on [202] that table. It cannot vary and still make a good grade of concentrates.

Q. What, if anything else, did you think should be done to the mill?

A. Well, I believe if it was my mill there would be several things, but I hate to say what should be done at somebody else's mill.

Q. Did you observe the amount of tailings that were at the mill there?

A. I have at various times.

Q. What relation did the tailings bear to the amount of ore that has gone through that mill?

A. Normally, if tailings are stored in a pond prepared for that purpose, you could estimate very closely the amount of tonnage that has been put through a mill. If tailings have been allowed to run down the creek, you have not much of a chance to estimate it.

Q. What is the situation there?

A. There was no pond constructed for the purpose of storing the tailings.

Q. Where did the tailings run?

A. From the mill into the Bonanza Wash, which

(Testimony of Ernest R. Dickey.)

I would just estimate two or three hundred yards above Burro Creek.

Q. In other words, they would run into [203] Bonanza Wash, which, in turn, feeds into Burro Creek? A. Yes, sir.

Q. Were you able to estimate the amount of tonnage of tailings there?

A. Well, that is pretty hard to say. At no time I would say that I ever saw tailings that would amount to over half a ton or a ton at the very most.

Q. Now, Mr. Dickey, you, I believe, have also been at the mine? A. Yes, sir.

Q. Both the shaft and open cut?

A. Yes, sir.

Q. Did you, from your experience in mining, Mr. Dickey, would you be able to even guess at the amount of commercial ore, mineable ore, at the open cut? A. No, sir.

Q. Why not?

A. There is quite a problem there. In the first place, if I was to be required to make an estimate of the tonnage in a situation of this kind, it would be very necessary that some exploration work be done. It would be impossible to walk over the surface of a property and estimate how [204] much tonnage is there, because there is no development or exploration work that would give you that information.

Q. Do you know of any instance in all your experience in mining, Mr. Dickey, where practical mining operators have gone to the expense of setting

(Testimony of Ernest R. Dickey.)

up a mill before exploration work to block out and determine the amount of ore body available?

A. Well, stating from practical mining——

Q. I say, people that know that business.

A. No. They fully determine their ore reserves before building a plant.

Q. Did you also examine the shaft which has been sunk in 28, I believe it is? A. Yes, sir.

Q. From your examination of that shaft and the surrounding area would you be able to form any estimate as to the amount of commercial ore available there? A. No, sir.

Q. Going a minute to this matter of the use of water in mining, Mr. Dickey, with respect to the running of water through an engine, what would be the result of running water through an engine, rather than circulating it if the thing were continued for quite a considerable period of time? [205]

A. Well, most of my mining experience has been in Arizona where water has been a problem, and no good practice would be to run water directly through an engine and let it run to waste, for two reasons; one, being conservation of water, the other, that most of the water in this State carries some solids, lime formation which is readily deposited in the water jacket of an engine. Therefore, when you run water from some source through an engine and let it run to waste, there is a good deal more chance for sediments and solids to be deposited within the water jacket and in due time will clog the water circulating system completely.

(Testimony of Ernest R. Dickey.)

Q. With respect to the use of the water in connection with the operation of a jackhammer, can you tell us what the normal use of water would be in an eight hour shift or twenty-four hour operation, whichever is easier?

A. The operation of water——

Mr. Cox: Just a moment. Is there any difference in the amount of water used in using a jackhammer according to the terrain, or the type of material that is being worked on by the jackhammer?

A. Yes, sir. [206]

Mr. Wilmer: Put it under the worst conditions.

A. Yes, sir.

Q. Give us the highest amount that would be used normally, Mr. Dickey, and under the worst conditions of the terrain.

Mr. Cox: Just a moment, I think if you are going to make a calculation——

Mr. Wilmer: Let's make it the worst and let it go at that.

The Court: Let's say the hardest rock in the country.

Mr. Wilmer: The hardest rock in the country that you know of.

A. The hardest rock don't take the most water. Hardest rock actually takes less water. It depends on your formation of your drilling, but to answer your question now, from worst conditions, or a man running a jackhammer would not use over 50 gallons of water to drill a round, but that would be in a shaft which we have in question now.



(Testimony of Ernest R. Dickey.)

Mr. Wilmer: How long would it normally take to do that?

A. Oh, four to six hours if they had good air pressure and a good machine.

Q. In respect to wetting down the ore under [207] the conditions that you observed at the Zannaras Mine, that type of ore and that type of mining operation, how much water would be required normally under normal conditions?

A. In actual mining practice, the amount of water that is used in drilling will be sufficient moisture to dampen the dust after the blasting has been made. You do not have to add more water unless you wait over a long period of time and let it dry out.

Q. Would you believe it would be practical in any one day to use as much as a thousand gallons of water in that shaft?

A. No, sir.

Q. If over continuous operations a thousand gallons would be dumped in there every day, what would be the results, or do you know?

A. It depends on the formation of the country. If it was ore that was porous, fractured or faulty, the water would seep away. If the formation was right, it would eventually fill the hole up.

Mr. Wilmer: I think that is all.



(Testimony of Ernest R. Dickey.)

Cross-Examination

By Mr. Cox:

Q. Mr. Dickey, I believe you stated yesterday [208] that you were qualified as a mining engineer and that you acted as a mining engineer at several mining companies in Arizona?

A. I don't remember exactly stating I qualified for a mining engineer.

Q. Well, was it consulting engineer?

A. Well, I did work in a consulting capacity, yes, sir.

Q. Did you work as an engineer for those companies?

A. In a consulting capacity, various occasions and for making examinations of properties.

Q. And you term yourself an engineer, as a consulting engineer?      A. No, sir.

Q. You weren't employed by them as a consulting engineer?      A. No, sir.

Q. Didn't you state yesterday that you were employed by the mining companies as a consulting engineer?      A. No, sir.

Q. Sir?

A. I said I worked at the UVX as a consulting engineer. I didn't say I was employed as a consulting engineer. [209]

Q. Well, weren't you employed by the UVX?

A. I certainly was, but not as a consulting engineer.

Q. What did they employ you as, Mr. Dickey?

(Testimony of Ernest R. Dickey.)

A. As superintendent of repairing of ore claims. That was my actual employment when I was employed by that company.

Q. And while you were there you worked, though, as a consulting engineer?

A. They took me out of that job and asked me to go and make examinations of various properties, which I did. In other words, that type of work would not be mechanical work, it would be consulting work, and—well, it would be in some cases consulting work and doing examinations.

Q. I believe you said that you had never registered as an engineer in this State?

A. Correct; State of Arizona.

Q. Did you ever apply to register?

A. No, sir.

Q. You have never been employed then by anyone in this State at any time as an engineer of any character?

A. Correct.

Q. Now, what former training have you had that would qualify you as an expert of engineering [210] problems of any kind, Mr. Dickey?

A. Well, do you want me to start from the beginning, or how do you want it?

Q. After grammar school, we will leave that out.

A. Okay. After grammar school and high school, we will leave that out, too?

Q. All right.

A. I started work at the United Verde Copper Company, as I told you. I took six years of night school training in mining engineering work.

(Testimony of Ernest R. Dickey.)

Q. Where? A. In Jerome.

Q. And under whom?

A. I can't recall the professor's name. He conducted regular classes at that time in the Hampton House.

Q. And the classes were there in Jerome?

A. Yes, sir; and I might further——

Q. What courses did you take there?

A. Sir?

Q. What courses did you take in those classes?

A. Took in the beginning, I took mechanical drafting, took mining, mapping and surveying and geology and mine management. Then aside from that I put in, oh, I think I'd have to make a [211] guess, but I put in weeks of time working in the engineering department of the United Verde Copper Company during the time that Mr. Talley was General Manager. That time was put in without any remuneration. I did it on my own accord, working with the different engineers for the purpose of gaining knowledge, and at the same time I worked at various departments in the mine, underground and surface.

Q. Now, wait; we were talking about formal education. We had this night school. What else, formal education?

A. I don't know exactly what you mean.

Q. What schooling did you have?

A. I didn't go to college, if that is what you want to know.

(Testimony of Ernest R. Dickey.)

Q. You have taken those courses. Have you taken any other course?

A. I just named the various courses that I took. I missed one. I did take Spanish along with that, and I have studied continuously since then.

Q. You are able to calculate the flow of water and the amount of water flowing past any point if you had the dimensions on the flow, are you not, Mr. Dickey? [212]

A. Well, it could be done. I can do the same as most engineers that I know do. We can go and measure the water and look it up in our textbooks and tell you exactly what it is.

Q. In other words, from a table you can calculate the flow? A. Exactly.

Q. Now, Mr. Dickey, referring to Defendant's pictures, being the Exhibits B, C, D and E, I believe you stated that Exhibits B and E showed the same pools down—the pools shown in the background of B, being the pools shown in the background of E, is that correct? And this is the same stick?

A. That is right, looking downstream when taken from different positions.

Q. Then looking at the foreground of B, can you see the bed of the stream there?

A. Not the particular channel, because of the growth and the boulders. This little channel stream that normally runs through the creek is running at its very lowest elevation, it is coming right around through here right this side of where Mr. Green is standing.

(Testimony of Ernest R. Dickey.)

Q. In other words, Mr. Green is standing right above the flow that is there? [213]

A. Yes; he is standing right beside it, you can see. In other words, he is down in that ravine there about to his knees.

Q. And then the same——

A. This is a close-up of that same little ravine down here.

Q. All right. This D then shows a close-up in the left upper corner of the ravine——

A. Channel.

Q. The channel?           A. Yes.

Q. What is the size of that pipe, Mr. Dickey?

A. That is what they call a two-inch standard pipe.

Q. Two-inch standard pipe?           A. Yes, sir.

Q. And what is the width of that ravine here going out of the Zannaras sump?

A. Well, now, it depends on how you want to ask the question, what is the depth, width, or what is the closest width?

Q. The closest width at this narrow point where we see this rock?

A. It is a little in the water. This is above the water.

Q. Yes; the one that goes down into the [214] water, slides down into the water across there at the nearest point.

A. Let's make it a foot in width.

Q. A foot in width?           A. Correct.

Q. How deep is the water at that point?



(Testimony of Ernest R. Dickey.)

A. Right at this particular point I don't recollect for sure, but I don't believe it could be over four inches deep.

Q. Four inches deep? A. Yes.

Q. This grass, that is Bermuda Grass growing there?

A. Well, it wouldn't be Bermuda Grass, I know, but I wouldn't know what you would call it.

Q. It is a type of grass?

A. That is right; it is vegetation.

Q. Well, is it very heavy, is it like sticks, or is it like grass that is flexible?

A. No; it was somewhat flexible. It is not what you might say real stiff.

Q. Then from the grass, the growing grass in the channel, that is not bent in any way by the flow that you can see in the picture, is it?

A. No; I wouldn't think so, no, sir.

Q. Then what would you say would be the [215] velocity of the flow across this gap here, one foot wide and four inches deep?

A. Right here I wouldn't say that there is any normal, you might say, flow particularly, because right at this point, this pool gets larger and the water looks to be standing still. In other words, it is just like running a stream of water into a big tub, or something like that, and you cut a hole on the other side, you wouldn't normally notice a current crossing in the tub.

Q. I don't mean the top portion. I mean the whole, the narrow point.

(Testimony of Ernest R. Dickey.)

A. That is what this is; that still seems level. The water is not coming in with any velocity.

Q. You say there is no particular velocity, then, at this point?

A. No particular velocity at this point, but just above that point there was, where water was tumbling down the rocks.

Q. You mean below this point?

A. No; up, you are looking upstream, now.

Q. Now this is the entrance of the water to the Zannaras point of diversion?

A. Sump, we call it; yes, sir.

Q. And this is the creek bed as you have [216] said on each side, and it shows dry, does it not?

A. Correct.

Q. And the only water then that shows at the point—would you mind marking the point here with a——

A. I have a pen.

Q. You have a pen. Just put an arrow like you would as an engineer to show that width.

A. In other words, that is the only stream of water——

Q. That goes into the Zannaras sump?

A. That is right (complying).

Q. Now, at the point that you have marked with arrows, being the only stream of water going into the Zannaras sump, there is no appreciable flow, I mean, you can't see a flowing in there?

A. That is right; right at that particular point where I put the arrow.

Q. At that point, and the same is true, on seeing

(Testimony of Ernest R. Dickey.)

no flowing, so you could not measure that flow through this sump?

A. I couldn't make any measurement as to the velocity.

Q. And will you now then take a piece of paper and show the Court how you calculated that there was a hundred gallons a minute of water [217] going into the sump by showing on what figures it could be based, leaving out the velocity.

A. Okay. Now, if you will recollect, I didn't say there was a hundred gallons a minute going into the sump. I said there was a hundred gallons a minute leaving the lower pool, of the big pool. If you will look at it you will see.

Q. Now, by the "big pool," you mean the pool shown on Exhibit——

A. The downstream side, correct. Now, the reason why that can be, as I've said before——

Q. Now, wait just a minute; let me—Mr. Wilmer will bring out anything you want to be heard.

A. All right.

Q. Where did you base your calculations from seeing it that day, Mr. Dickey?

A. All right. Now, let me explain this: When this picture was taken I was standing very closely on the other side of the suction or the diversion point of Mr. Zannaras.

Q. I don't want to get you confused. All right, just a moment.

A. See, this is the south side of the picture and

(Testimony of Ernest R. Dickey.)

I was standing over here looking back down that way. [218]

Q. All right.

A. Okay. Now, this water level here is somewhat lower than the water in the point where the pick-up pump is, because of obstructions, boulders, gravel, and so forth. The level in that pond is a little bit higher than the level in this pond. The creek there goes downstream pretty rapid, evidently. The elevations are a good deal different, but it is open here for a distance of approximately 100 feet or more across, or very near level, or the water would not have been standing there as it was, but over on this far corner, at the downstream side, out of that pond you can't see in the picture here now——

Q. Just a moment, let's get this. You are speaking of Defendant's E? A. Correct.

Q. Now, you are saying that the farthest point—— A. At the outlet of that point.

Q. At the outlet of that point?

A. Correct; the outlet at the point when I observed it, I estimated to be 100 gallons a minute.

Q. Do you have any pictures of that water flowing at that outlet? [219] A. No, sir.

Q. Do you have any pictures of the water flowing, showing any velocity at any point in Burro Creek at the time you took those pictures?

A. I don't have any pictures with me. I do have pictures up at our place, but I didn't bring them with me. I might state this, that at that outlet, for further evidence, there is quite a reef of large



(Testimony of Ernest R. Dickey.)

boulders and small boulders back in around it. The gravel is pretty badly hard and cemented there and the water is running down creek pretty rapidly out of that pool.

Q. That is clear on down the pool?

A. About a hundred yards—not over a hundred—50 feet, 50 yards, probably. We are standing right close to the suction now, and I don't believe it would be over a couple of hundred feet down there.

Q. Looking back now at the exhibit that we have marked with the arrows, that is what you engineers would term the same as a weir, is that right?

A. Yes; I would say so.

Q. Now, I——

A. It depends on the velocity. If the water is standing still there wouldn't be any flow. [220]

Q. And if there was a flow, how fast would the flow have to be, Mr. Dickey, to——

A. Okay. I can see what you are driving at, and I think I can answer. At this particular point I would estimate, probably, maybe 15 or 20 gallons of water coming out of the rocks and gravels right there at the surface coming into this little pond, but as I explained before, this basin or gravels was a good deal higher right directly above the suction, and on up the creek a little ways there wasn't any water, and then the water was seeping and coming through the gravels. This pond is higher than the other picture I showed you where the other pond is, therefore, I would say that the water that made the difference in the flow from what you can see on the



(Testimony of Ernest R. Dickey.)

surface here at the higher elevation and the outlet in the lower point at the lower elevation was made up by water coming through the gravels and boulders.

Q. Can you calculate, and I show you Peele's Mining Engineer's Handbook, which is a standard handbook, is it not? A. Yes.

Q. And referring you to the table "Discharge in Cubic Feet Per Second Per Foot of Length [221] of Thin-Edge Weirs," and ask you if you can calculate what velocity flow would have to be at that point one foot and four inches deep in order to have a hundred gallons a minute?

A. I didn't say there was a hundred gallons a minute going into that.

Q. Can you calculate—will you calculate it for me?

A. Because there is no flow of water, I told you that.

Q. What would have to be calculated if you had the actual measurements instead of just guessing, by looking, what would have to be calculated in order to get that flow, can you show that?

A. Okay; just let me look at this and see what you mean here (looking at book). It will take close to—three inches——

Q. Can you figure it for me?

A. There is charts already figured out. We don't have to figure it.

Q. All right; then it is all figured out in the handbook?

(Testimony of Ernest R. Dickey.)

A. That is right, 7.48 gallons a cubic foot.

Q. 7.48 gallons? A. Per average. [222]

Q. It will take close to what, now?

A. Three-inch depth in a weir a foot wide.

Q. And you calculated that flow in your mind to get from how many—you worked out how many cubic feet of that, Mr. Dickey, you ran it back from cubic feet, did you not?

A. I don't quite follow you.

Q. You ran it back to get it to gallons from cubic feet. Where do you find it on your table?

A. You have your equation to work from here. As I told you before, you have the area of whatever the necessary width may be, and you measure your depth there, and those are already worked out in charts. You don't have to do any mathematics or use a slide rule or anything of the kind. They are already worked out. That is done for fellows just like myself.

Q. You did not get that from this table?

A. I didn't actually get it from here right now, because a foot wide and an inch deep is approximately 33 gallons. I know that a gallon of water, I mean, a cubic foot of water is 7.48 gallons.

Q. That is right.

A. And it weighs approximately 62½ pounds.

Q. That is right. [223]

A. And that is not on here either. I expect a fellow could find out if he wanted to look it up.

Q. From the table, is that the type of table you figured from to calculate that sum, Mr. Dickey?

(Testimony of Ernest R. Dickey.)

A. Yes, sir, but this is what they used.

Q. That is the table you used?

A. There is various tables, there is dozens of tables.

Q. Will you then calculate for the Court the flow of water through a weir one foot wide and four inches deep and just calculate it here from the table? You have the table, so you can show from the table where you arrived at your figures.

A. It would be approximately 132 gallons a minute.

Q. Now, will you explain how you arrived at that?

Mr. Wilmer: May it please the Court, if the man is figuring it, it does not make any difference whether he takes it from the table or where he takes it, wasting an hour at a time.

The Court: Put your man on and let him figure it. You have your dimensions if he is wrong.

Mr. Cox: Well, I just want to show that he could not compute it. He said he would have [224] to have a table.

The Court: Well, he did.

Mr. Cox: Not from the table.

The Court: Well, your witness can compute it from the table to see which is right and which is wrong.

Q. (By Mr. Cox): Mr. Dickey, you computed that by multiplying four by 33? A. Yes.

Q. You didn't obtain that 33 from the table?

A. I didn't even refer to it.

(Testimony of Ernest R. Dickey.)

Q. All right, that is what I thought.

A. I had already had that figured in my mind. Why should I go through a lot of mathematics to find it out? It is just some table on the diameter of a pipe, increased four times. I already have that.

Q. Mr. Dickey, in these pools you say there wasn't less than 60,000 gallons nor more than 100,000 gallons, was there? A. Estimate it.

Q. That was all down below Mr. Zannaras' place? A. Correct.

Q. And there was no flow of water could be seen into Mr. Zannaras' sump? [225]

A. As I told you awhile ago, a few gallons a minute seeping out of the gravels there.

The Court: This water had to flow past the sump to get there?

A. That is right, through the gravels, but not a surface flow.

The Court: Yes.

Mr. Cox: And you estimate there were a few gallons a minute seeping through the sand into the sump? A. Flowing into that sump; yes, sir.

Q. Now, how deep did Bagdad dig in to construct the sump for their diversion at Burro Creek?

A. That was installed before I came to Bagdad, so I don't know what they did in the beginning. The only thing I can go on is from observations after I took over the operation. It is a natural hole and there is times when flood waters come in and fills this hole very near full with gravels. We have to go out with equipment and muck that out of there.

(Testimony of Ernest R. Dickey.)

The Court: We will have our morning recess at this time.

(Thereupon, a short recess was taken after which all parties, as heretofore noted by the Clerk's record, being present, the trial resumed as [226] follows.)

ERNEST R. DICKEY

resumed the witness stand and testified further as follows:

Cross-Examination

(Resumed)

By Mr. Cox:

Q. At the crossing when you saw the water there, Mr. Dickey, you say that it was about how deep, or that water where it was around four feet wide?

A. It varied from four inches, and it varied in width, too. It depends on the distance you want.

Q. Well, at the particular place, was there any particular place you have in mind that you remember?

A. Yes, sir. At the downstream side of the road it crosses the creek.

Q. And how wide was it there?

A. Well, the estimate I made there for calculating purposes would be about four feet in width the water was flowing.

Q. And how deep?

A. Oh, approximately four inches.



(Testimony of Ernest R. Dickey.)

Q. And how many gallons per minute did you calculate the water was going past that point?

A. Well, it depends on a lot of [227] obstructions that could be in there, but I would say there was more than a hundred gallons a minute passing that point. It depends on the speed and velocity, and so forth. If the water was going very slowly you would not estimate very much water. If it was running pretty fast, you would say there was a lot more water.

Q. And you estimate, though, a hundred gallons a minute, or a little better than a hundred gallons a minute there, is that correct?

A. Yes; more than a hundred gallons.

Q. You say you got that for calculating purposes. Did you calculate how much water was going past there?

A. Not exactly, because I wasn't interested.

Q. I am asking you, and you answer. Just answer me, Mr. Dickey. Did you calculate it?

A. I will say no.

Q. Well, you didn't, then?

A. That is what I told you.

Q. Yes, and when was it you saw that, you say in October, was it?

A. No, sir; July 16th.

Q. July 16th, and have you at any time, Mr. Dickey, made any calculations on the flow of water at any point above Mr. Zannaras' place, below [228] your point of diversion, have you made any?

A. No, sir.

(Testimony of Ernest R. Dickey.)

Q. And how far is it from Mr. Zannaras' place to your point of diversion?

A. Well, I never measured it or anything of that kind. I would say about 12 miles.

Q. About how far? A. About 12 miles.

Q. Showing you Plaintiffs' Exhibit 2 in evidence, what is the purpose of the ladders, the ladder work there above the pump?

A. Okay. This ladder work is a framework and on top of this frame is rails installed on that. The pump is mounted on a truck that has cart wheels on it, and in cases when there is floods coming down the creek, this pump is pulled up that framework or ladder, as you explained it, by means of a hand winch at the top connected with a cable to the pump.

Q. How high can that be pulled?

A. Could be pulled clear to the top, if necessary.

Q. How high have you seen it pulled while you have been there? A. Oh, about 12 to 15 feet.

Q. Does water come up that high? [229]

A. Well, I never seen the water that high. I saw the water about five to six feet high coming through that canyon there.

Q. The way the water flows through that canyon it tends naturally to leave a pool where your point of diversion is, doesn't it? A. Correct, sir.

Q. And the current tends to, when there is a flood, to clean that out again, doesn't it?

A. No, sir; not necessarily. Sometimes it has a tendency to clean it out and other times it will fill it up and we have to clean it out with equipment.

(Testimony of Ernest R. Dickey.)

This past summer we had to take a drag line down there and clean it out.

Q. When; this past summer?

A. During the summer months. The fact of the matter, it is still down there in that area working now.

Q. I say, about when, after June, you mean that by "summer"?

A. Yes; it would be after June.

Q. There has been no floods since June, has there?

A. Yes, sir.

Q. Up until when was there a flood?

A. There was a big flood come down there [230] on the night of August 4th, and the morning of August 5th. That is the time that I stated that I saw water five or six feet high.

Q. Of this summer?

A. Yes, sir.

Q. The pictures showing this Zannaras sump, one of them being Exhibit C, the picture was taken from downstream, was it?

A. Looking up, yes, sir.

Q. And the black across here is white sand, is it not?

A. No, sir.

Q. There is little pieces of water?

A. In this particular picture, if I recollect the way the light reflected, the lighter portion is water, the darker portions in here is vegetation grown up right through the water. This is all water in between the rocks here, not sand. Here is sand out here. That is white.

Q. The white is rock, is it not?

(Testimony of Ernest R. Dickey.)

A. Could be rock, sand, gravel, just the same as you see up here.

Q. Well, on the pump, the electric pump pumping water, you say that you were able to gain knowledge of estimating it by knowing the amount the pump was pumping and seeing it [231] discharge and running?

A. Various times. There is displacement pumps, air pumps.

Q. And on these pumps, they have a certain gallon-per-minute rating, do they not?

A. Manufacturer's rating, yes, sir. They all vary.

Q. And from those ratings you were able to know how much the pump was pumping and be able to tell, seeing the discharge, to estimate what came out of the——

A. Correct.

Q. Well, does a pump pump what its rated at?

A. No, sir.

Q. What is the difference?

A. Inefficiency of the efficiency of the pump and friction and pipelines heating. All of those things figure into it.

Q. Is the electric pump pumped at constant speed?

A. If the power is constant.

Q. Is your pump at Bagdad operating efficiently?

A. As efficiently as you can for that type of pump.

Q. And what percentage of efficiency would you say that the pump was pumping on the [232] manufacturer's rating?

A. 80 per cent.

Q. Was there a Mr. Kinard, some name like

(Testimony of Ernest R. Dickey.)

that, that was there before you? A. Kendall.

Q. Was it Kendall? A. Yes, sir.

Q. Was he in the same position you are now in?

A. Yes, sir.

Q. Have you examined the records of the Water Department concerning your—the Bagdad water rights?

A. I have—no, sir; I have not. Inspected as to our water rights, and so forth, through our attorneys.

Q. But you have not examined the proof of use of water filed by Bagdad?

A. I looked at one of the permits yesterday. I have examined one.

Q. You mean the permit——

A. Granted by the State, yes, sir.

Q. But you didn't look at the proof of use by Bagdad or seeing the amount of water you were using there? A. No, sir.

Q. Do you have at any point on your [233] diversion a gauge showing the amount of water that you are taking out? A. No, sir.

Q. I believe you stated yesterday that you were using around 100,000 gallons per day for domestic purposes? A. Yes, sir.

Q. Now, is that for the Bagdad employees?

A. Anyone that lives there; everyone.

Q. And there are other mining camps, miners from other mining camps also living at Bagdad?

A. Yes, sir.

Q. Hillside miners live at Bagdad?



(Testimony of Ernest R. Dickey.)

A. Yes, sir.

Q. Is there any charge made to the Hillside mine or to the miners for the water? A. No, sir.

Q. Is the Hillside Mine a part of the Bagdad operations? A. No, sir.

Q. The water is used for landscaping and gardening also at Bagdad? A. Yes, sir.

Q. I believe you stated that they had—that you used approximately four to five thousand gallons per day of fresh water in your milling? [234]

A. Yes, sir.

Q. Now, in your domestic water do you include the gardens in your computation of that?

A. Yes.

Q. Are there any other mining claims or mines that there are miners also living at Bagdad and you furnish water to? A. Yes, sir.

Q. Which others?

A. Goodwin's Mining Company No. 2 Mines.

Q. Are those near there? A. Yes, sir.

Q. How far?

A. Oh, airline, this is three or four miles.

Q. By road?

A. By road, probably 10 miles, 12 miles.

Q. And the Hillside Mines, how close?

A. By road, about 10 or 12 miles.

Q. Do you, personally, have any interest in those? A. Yes, sir.

Q. The seepage from the tailings dam, you said that you had measured the flow of that seepage?

(Testimony of Ernest R. Dickey.)

A. I had the engineering department measure it with a weir box. [235]

Q. And they measured that at the point shown on Plaintiffs' Exhibit 5 in evidence?

A. Let's see.

(The exhibit was shown to the witness.)

A. If you will look here closely, that weir box is sitting right in behind these rocks right at the foot of the pump.

Q. What is the concrete construction there and what is the purpose of that, Mr. Dickey?

A. I will have to tell you from hearsay. That was there before I came.

Q. You don't know whether that was put in there to reclaim the water or not?

A. It was out there from back in years ago to reclaim the water that was coming down that creek, yes, sir.

Q. Do you use any water for leaching?

A. Sir?

Q. Do you use any water for leaching?

A. We do not.

Q. Do you have any leaching operation at all?

A. Going on? No, sir.

Q. Did you have any installation for leaching?

A. We did from an experimental standpoint on a small scale.

Q. When did you stop that? [236]

A. Well, I'd just have to make a guess, however, there is a man here that can tell you the exact date.

Q. Did you make a statement at the Small Mine

(Testimony of Ernest R. Dickey.)

Operators meeting in Prescott a few months ago concerning the pumping of carbonates and blue ores in for leaching purposes by the dam?

A. Oxide ore. That is what that dam is made out of there, from our tailings pond.

Q. Is that for leaching purposes?

A. It is primarily to store the tailings, but we did anticipate leaching at that time.

Q. But you are not leaching it at all now?

A. No, sir.

Q. But the purpose, the ore being there is a natural leaching process?

A. That is right; natural drainage for it.

Q. Do you know whether the water in the dam, is it the same as the water from Burro Creek as to acidity and usability; is it base or acid, do you know?

A. We make tests on that, oh, various times every month or two to satisfy our own curiosity. We have seen samples of it,

Q. The question is, do you know whether it is acid or base? [237]

A. It is neutral.

Q. It is neutral water. Do you know what the Ph of that water is?

A. About 7.5.

Q. When you looked at the Zannaras Mine, isn't there a ten-inch mesh screen classifier to keep in ore larger than that from going out of the ball mill?

A. From going in over the jig, there is, yes, sir.

Q. Do you know what ores there are at the Zannaras Mine?

A. I know what it is reported to be.

(Testimony of Ernest R. Dickey.)

Q. Have you ever checked the property, you say you have been over there, have you checked it to see what type of ores there are?

A. I didn't do it in that way, you might say. We did take three samples this last summer to satisfy our curiosity as to what type of ore it was.

Q. How much material do you take to get a fair sample?

A. Well, it depends on the conditions, what the width of the area that we are sampling is and normally it would run about 10 pounds per sample.

Q. You picked up normally about 10 pounds per [238] sample?

A. It depends on the condition. If it is extra wide width, you are going to take more.

Q. Do you have a mineralite?

A. Yes; I do.

Q. Did you use a mineralite on these samples?

A. I did.

Q. Have you ever been to the Zannaras property at night?

A. No, sir.

Q. You state that you always block out your ore before you start your mill?

A. Build a mill?

Q. Yes. Did you do that at Hillside?

A. It was already blocked out. I didn't have to do it.

Q. That mine, it was an old mine?

A. Already developed; yes, sir.

Q. It had not been operating for years?

A. Several years; yes, sir.

(Testimony of Ernest R. Dickey.)

Q. Where does that mill get its water from, Hillside?

A. From the mine, the Hillside Mine?

Q. Yes. A. From the Hillside Mine.

Q. From the Hillside Mine? [239]

A. Correct.

Q. Is there any water taken from Bagdad to Hillside? A. No, sir.

Q. Is there any water taken from Bagdad to the Goodwin property? A. Yes.

Q. How much water is taken over there?

A. I have no idea.

Q. What is it taken over there for?

A. Drilling purposes, mining purposes and cooling engines, and so forth.

Q. In other words, the Bagdad, the water that they are using from Burro Creek is also being used for the Goodwin property in the development there?

A. Correct.

Q. How was it taken there?

A. In a tank truck.

Q. What is the size of the truck?

A. Oh, I don't know. It is about, maybe two and a half ton truck.

Q. Did you take a shovel or anything of the kind to check at the Zannaras diversion as to how far down bedrock was?

A. Oh, my goodness, I sure did not, because, my gosh, that has big boulders that would run [240] into work which would probably take a couple of men a week to do.



(Testimony of Ernest R. Dickey.)

Q. Isn't there a natural rock formation across the creek just above the Zannaras property that brings the water to the surface there?

A. You mean, that is swept clean on solid bed-rock?

Q. No.

A. There is rock on both sides, solid rock on both sides of the canyon.

Q. Solid rock on both sides of the canyon?

A. Yes.

Q. And it comes right on down and there is just sand and gravel on the top?

A. In the bottom, yes. How deep that is, I don't know.

Q. You don't know how deep that is?

A. No, sir.

Q. What type of pump is it that you have there at your point of diversion?

A. 25 horsepower Ingersoll Rand Centrifugal Pump.

Q. And the manufacturer's rating is how many gallons per minute?

A. Oh, if I recollect, about 700 gallons a [241] minute.

Q. 750, isn't it?            A. I won't say.

Q. How many horsepower is that pump?

A. 25 horsepower.

Q. What tonnage are you milling there?

A. Average about 3,000 tons a day.

Q. And do you know how much water you are using per ton for milling?

(Testimony of Ernest R. Dickey.)

A. Oh, I could make a guess, but I have the mill superintendent here to answer that question.

Q. Is the former superintendent still at Bagdad?

A. No, sir.

Q. He is not available, is he?

A. I don't have any idea where he is at.

Q. How much head, what is the height that the pump raises the water?

A. The diversion pump?

Q. Yes. A. About 91 feet.

Q. Isn't that the pump at the lake?

A. That is right.

Q. What about the one at Burro Creek?

A. The pump at Burro Creek, that is the one we are talking about. You mean the sump pump?

Q. Your main pump, where is your main [242] pump? A. Now, let's clarify this a little bit.

Q. I say when you say 91 feet, isn't that the pump up at your lake where you repump your water, recirculate it?

A. You mean from the tailing pond?

Q. Tailing pond.

A. Well, I think we got about two pumps on there. I think there is one that has got about a 60 horsepower motor and I think the other is about 75.

Q. Well, is there a pump—there is a pump at the sump. Now, that pump—then there is a pump at the tank above, isn't there? A. Yes.

Q. You have two pumps up at the tailings pond, as you call it? A. Yes, sir.

(Testimony of Ernest R. Dickey.)

Q. And those are both recirculating pumps, I mean they bring water back up?

A. Yes; they take the water from the mill pond and put it back up in the storage tank for use in the mill.

Q. Now, the pump that is on Burro Creek, that, you say, is a 25 horsepower pump?

A. Correct.

Q. And it, you say, has a head of 91 feet? [243]

A. Approximately.

Q. And the pump at the tank above is what size?

A. About 125 horsepower, four-inch discharge.

Q. And you say that has a four-inch discharge?

A. Yes, sir.

Q. Then you are taking out, anyhow, considerable water there, you would be running at least the amount of your water right there at Bagdad, would you?

A. No; I don't think we are using that much.

Q. How much less would you say you are using?

A. Oh, a third less.

Q. A third less?                      A. Yes; on the average.

Q. Would you say you are using about 200,000,000 gallons?

A. Probably a little over, maybe 250,000,000 gallons a year average fresh water.

Q. And that would be your fair yearly average?

A. I would think so.

Q. And there is 50,000,000 gallons then that you say, of your water right, that you are now using?

(Testimony of Ernest R. Dickey.)

Mr. Wilmer: Just a moment; there is no evidence as to what the water right is. [244]

The Court: No; it does not mean anything to the Court.

A. May I, at this time——

The Court: No.

A. Okay.

Mr. Cox: That is all.

(The witness was excused.)

### CLYDE C. COFER

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

#### Direct Examination

By Mr. Wilmer:

Q. Will you state your name?

A. Clyde C. Cofer.

Q. Where do you live, Mr. Cofer?

A. In the Kingman District, Kingman.

Q. What is your business?

A. Ranching to stock raising.

Q. How long have you been in the Kingman District, Mr. Cofer?

A. Well, I have been in Mohave County all my life, Mohave and Yavapai.

Q. Were you residing there?

A. Yes, sir. [245]

Q. I believe, Mr. Cofer, that you at one time owned what is known as Burro Creek Cattle Ranch?

(Testimony of Clyde C. Cofer.)

A. Yes, sir.

Q. How long have you been familiar with the Burro Creek District and the Burro Creek Cattle Ranch?

A. 50 years.

Q. I take it, then, that you have spent a considerable portion of your summer in the area, is that right?

A. Well, not every summer.

Q. I mean, are you generally familiar with the area for the past 50 years?

A. Yes, sir.

Q. How extensive was the Burro Creek Cattle Ranch; how much was the holding, the spread?

A. Right at two townships.

Q. When did you buy that, Mr. Cofer?

A. May, '40.

Q. Were you familiar with the use which the Burro Creek Cattle Company had made of the water in Burro Creek, were you familiar with the use which the Burro Creek Cattle Company had made of the waters of Burro Creek?

A. Yes, sir. [246]

Q. You are familiar, I presume, then, Mr. Cofer, with the Bagdad property and the stretch of the creek bed below that down to the Kingman Crossing?

A. Yes, sir.

Q. Do you have any ranch headquarters in that area?

A. That is the Burro Creek Ranch headquarters.

Q. Where is that with respect to the Kingman Crossing?

A. Four miles by—

Q. Four miles by the creek?

A. By the creek.



(Testimony of Clyde C. Cofer.)

Q. What do you have at those headquarters, Mr. Cofer? What improvements were there there?

A. Well, about 40 acres of land, irrigated land, house, corrals, fences, pasture.

Q. To your knowledge, Mr. Cofer, has the Burro Creek Cattle Company used the waters of Burro Creek prior to 1919?

A. Yes, sir.

Q. The use of water and irrigation?

A. Yes, sir.

Q. Now, during the summer, Mr. Cofer, will you state whether or not all of the waters of Burro Creek which came below the Bagdad Mine [247] and to the area of the ranch headquarters were used by the Burro Creek Cattle Company and by you after you owned it?

A. Yes, sir.

Q. Was there any surface flow of water which went past your ranch headquarters during the time you owned the property through the months of June, July, or August, unless there was a flood?

A. No.

Q. You were then using the waters to irrigate as much land as you could, is that right?

A. Well, for three years I was there, irrigation water was completely dried up.

Q. Every summer?

A. Yes, sir.

Mr. Wilmer: Mark this.

(Thereupon, the document was marked as Defendant's Exhibit H for identification.)

Q. (By Mr. Wilmer): Mr. Cofer, I believe in '42 you sold the Burro Creek Cattle Ranch and all

(Testimony of Clyde C. Cofer.)

water rights appertaining to it to the Bagdad Copper Company, is that right?      A. I did.

Q. I show you an instrument marked Defendant's H for identification. Will you examine that, please, and state if that is your signature and [248] the signature of your wife?      A. Correct.

Mr. Wilmer: We offer it in evidence.

Mr. Cox: If the Court please——

The Court: I don't want to look at it now. If you will state your objection for the record, I will admit it subject to your objection and you can argue about that later.

Mr. Cox: We object; it is immaterial in that the instrument shows on its face that it carries with it only springs which are not subject to appropriation and that only in connection with a ranch operation, and that the—no place is there anything that would give any rights under this instrument to the Bagdad Corporation for mining purposes.

The Court: All right, it may be admitted subject to your objection.

Q. (By Mr. Wilmer): Mr. Cofer, I believe that the reason why those 40 acres of irrigated land is no longer irrigated and dry is because of the sale of the water right to the Bagdad Copper Corporation, is that right?      A. Yes.

Mr. Cox: I am sorry, I didn't hear the [249] question.

(The question was read by the reporter.)

Q. (By Mr. Wilmer): Mr. Cofer, carrying your

(Testimony of Clyde C. Cofer.)

recollection back over the 50 years that you have been familiar with this country, I take it it has been in connection with stock raising and ranching activities?      A. Yes, sir.

Q. Do you know approximately the number of head of cattle that have been run on that spread and watering from Burro Creek from time to time by you and your predecessors?

A. For about three years John Neel had about 35 head of cattle there.

Q. Do you remember when that was with respect to World War I?

A. During World War I and afterwards.

Q. In other words, prior to 1919 and afterwards?

A. Yes, sir.

Q. And subsequent to that time, was there any cattle from time to time grazed on that land?

A. That is the old original Cornwall Range that goes back into the late Seventies.

Mr. Wilmer: Cross-examine. [250]

### Cross-Examination

By Mr. Cox:

Q. The waters that you used from Burro Creek, Mr. Cofer, were used for your cattle and agricultural purposes, were they not?      A. Yes, sir.

Mr. Lockwood: May it please the Court, we move to strike the testimony of this witness on his last answer. I'd like to be heard for a few moments.

The Court: I will listen to your arguments when

(Testimony of Clyde C. Cofer.)

the case is concluded, but I can't take up the time today to hear argument. You see, there is no jury here to be confused, so I just simply cannot take the time because I have to get through with this case.

Mr. Lockwood: Very well, we will reserve the argument then until the close of the case.

The Court: All right.

Mr. Lockwood: That is all.

Mr. Cox: That is all.

Mr. Wilmer: That is all, Mr. Cofer.

(The witness was excused.) [251]

## ROLAND F. KASER

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

### Direct Examination

By Mr. Wilmer:

Q. What is your name, please?

A. Roland F. Kaser.

Q. What is your business, Mr. Kaser?

A. I am an engineer employed by the Bureau of Reclamation at Boulder City, Nevada.

Q. And, briefly, Mr. Kaser, what work have you done—first, what is your educational experience?

A. I have had five years of college work, one year in agriculture, four years in engineering, leading to a degree in civil and irrigational engineering.

(Testimony of Roland F. Kaser.)

Mr. Cox: We will admit Mr. Kaser's qualifications.

Mr. Wilmer: All right. Following your graduation from college, Mr. Kaser, did you have any practical experience?

A. Yes; I worked—I assume you are referring to what might apply to this case?

Q. With respect to this case, yes. [252]

A. I was a hydrographer for the Geological Survey, Department of the Interior, for two and a half years, working in the States of Colorado, Wyoming and Nebraska.

Q. What was your work in that connection?

A. Stream gauging.

Q. Was it actual work in the field?

A. Yes, sir.

Q. How was that gauging done, Mr. Kaser?

A. It was done almost entirely by current measuring observations, measuring the cross section by tape and securing velocity observations with a current meter, and computing the discharge and working up records and publication in the water supply papers, also there were some measurements on flood flows to slope area, computations from high water marks after the flood had passed.

Q. Presently, you are with the Bureau of Reclamation at Boulder City doing what?

A. My position is chief of the division of Operational Control where I set up a schedule for release from Hoover and Parker Dams and dispatch the



(Testimony of Roland F. Kaser.)

water between Hoover Dam and international boundaries.

Q. Is it necessary in connection with that work that you have reasonably accurate information [253] as to stream flows, a stream feeding into any tributaries that feed into Parker or the Colorado River?

A. Yes; particularly those that feed into Havasu Lake. That is a reservoir formed by Parker Dam.

Q. In connection with that work, Mr. Kaser, have you had occasion to inspect or look over Burro Creek and its tributaries?

A. Yes; I have made numerous trips to that area in connection with the installing of a flood warning system at the Bill Williams Station and one of the stations is on Burro Creek.

Q. Where is that station on Burro Creek?

A. It is right at the intake of the Copper Company's pipeline.

Q. Right at the intake of the Bagdad Copper Company and that is right above, I believe, the confluence with Boulder Creek and Burro Creek, is that right?      A. That is correct.

Q. In August, '48, did you have occasion to go to Burro Creek?

A. Yes; I made a special trip from Boulder City to Bagdad and Burro Creek areas to observe high water marks from a flood that had come [254] down and had been reported to me by radio, coming on the afternoon of the 4th and 5th, and continuing on. I wanted to also look the site over for a location of a staff gate.

(Testimony of Roland F. Kaser.)

Q. Previous to the time you went there on August 8th, did you receive reports as to the flood on Burro Creek from anyone?

A. Yes; I have a flood warning system using radio communication and received reports each morning from—well, Burro Creek is one of the stations.

Q. Who would make those reports to you before you made this trip on August 8th?

A. Mr. Deacon, of the Bagdad Corporation.

Q. In the event of a flood is the only time you receive a report as to the flow of the river?

A. Well, we receive reports from time to time, but since our main interest was in flood flows, we don't receive a definite reading whether or not it was normal flow or not, but any time there is a flood which goes above normal, we have whatever observations they can make.

Q. Right now, on August—what date did you say you went to Bagdad?

A. I was there at Bagdad the night of between August 9th and 10th, and visited Burro Creek [255] on the morning of August 10th.

Q. When you went to Burro Creek did you see any signs, Mr. Kaser, of a recent flood?

A. Yes, sir.

Q. What signs did you see?

A. Drift lodged on the banks at high elevations which supported the previous report that the river had been up between six and seven feet.

Q. Now, did you, yourself, make any observation

(Testimony of Roland F. Kaser.)

as to the water which was flowing out of the diversion sump of the Bagdad Copper Company and on down the river?

A. Yes; I did. On that particular occasion I walked down in the channel below the pump pool and made a deliberate attempt to estimate the flow. I estimated the width and cross section and the depth and the velocity and judged there was 15 second feet flowing.

Q. 15 second feet flowing out of the sump and on down the river? A. Yes; surface flow.

Q. Did you actually get down into the stream in the sense of taking off your shoes and walking through it? A. Yes; I did.

Q. Did you, for your own purpose, take a [256] couple of pictures at that time? A. Yes.

Q. Do you have those with you? A. Yes.

The Court: Well, it is 12:00 now. We will suspend until 1:30.

(Thereupon, a recess was taken at 12:00 o'clock noon.)

1:30 o'Clock P.M.

(All parties as heretofore noted by the Clerk's record being present, the trial resumed as follows.)

Mr. Wilmer: Mark these.

(Thereupon, the documents were marked as Defendant's Exhibits I and J for identification.)

## ROLAND F. KASER

resumed the witness stand and testified further as follows:

Direct Examination  
(Resumed)

By Mr. Wilmer:

Q. I take it, Mr. Kaser, it is not an unusual thing for you to take snaps of the areas where you have visited for the purpose of observation?

A. No; I usually do that. [257]

Q. Referring to Defendant's I for identification, Mr. Kaser, will you state if that actually portrays the water running out of the Bagdad sump and on down Burro Creek?

A. Yes; I think it does. At the time I took the picture I didn't have anything particular in mind, no more than showing the general area, but it does show the flow going out at approximately the point where I made the estimate.

Q. Is that true likewise of Defendant's J?

A. Yes; those two are practically identical. I just took two to be sure I got one that would be good.

Mr. Wilmer: We offer these in evidence.

Mr. Cox: No objection.

(Thereupon, the documents were received and marked as Defendant's Exhibits I and J in evidence.)

Q. (By Mr. Wilmer): The point at which you measured and estimated the flow is in the left fore-

(Testimony of Roland F. Kaser.)

ground in each of those two exhibits, I and J, in evidence, is that right?

A. Yes; it would be approximately at the left edge of the picture.

Q. While you were there, Mr. Kaser, I believe you stated you left instructions for the installation of a gauge, is that correct? [258]

A. Yes; I had secured the enameled staff gauge sections.

Q. They are provided by the Bureau of Reclamation, is that correct?

A. Yes, and I left them there with Mr. Deacon for them to be installed and we selected a point at which the installation would be made, and I also requested that they take level notes on three cross sections in the area so I could compute the rating curve for that location.

Q. Did you subsequently receive from Mr. Deacon or someone there the survey notes of the cross sections you had requested? A. Yes.

Q. And from that did you compute a rating curve? A. Rating curve, yes.

Q. Did you likewise compute, Mr. Kaser, the amount of water which would be flowing and down the river at a given point on the gauge?

A. That is what a rating curve means. It is the discharge corresponding to certain gauge readings.

Q. I believe you testified, Mr. Kaser, that you found there was 25 second feet of water flowing out of the sump and down Burro Creek while you [259] were there? A. 15.



(Testimony of Roland F. Kaser.)

Q. 15; I am sorry; 15. Did you find there was any water flowing from Boulder Creek into Burro Creek?

A. I walked into the channel of Boulder Creek just above its mouth, which is where it joins Burro Creek, and the water was in pools between the rocks, however, the best estimate I could make of that was a quarter of a second foot.

Q. Quarter of a second foot?

A. That is a quarter cubic foot per second.

Q. Now, Mr. Kaser, transposing that into gallons, can you tell me how many gallons the 15 second feet represented which was flowing out of the sump and down the river?

A. That is about 6,700 gallons per minute.

Q. 6,700 gallons per minute, and then that would mean 60 times that amount per hour?

A. That is correct.

Q. I believe we computed that this morning as 403,200. Do you recall if that is approximately correct?

A. That is approximately correct.

Q. And on a 24-hour basis, which you also have, it would be 9,676,800 gallons of water in a [260] 24-hour period flowing down the creek?

A. That is approximately correct.

Q. Can you tell me offhand what a quarter second foot would represent in gallons?

A. Well, one second foot is approximately 450 gallons per minute, so a quarter would be 112.

Q. And you recall that amounts to approximately 161,280 gallons?

(Testimony of Roland F. Kaser.)

A. That is approximately right.

Q. Or a grand total of 9,838,080 feet of water—gallons of water in a 24-hour period flowing down Burro Creek? A. Yes.

Q. Did you receive—I believe you stated you did make the rating curve as applied, with information to Mr. Deacon, is that right?

A. That is right.

Q. Have you been back since that time, Mr. Kaser?

A. Yes; I was in Bagdad on the 23rd and 24th of February, just two weeks ago, and for the purpose of securing data to check the original computations that I had made.

Q. Did you find the gauge installed as you had—

A. This gauge was installed and we took [261] level notes on the actual water slope and computed the check points on my rating curve.

Q. And did you find your original rating curve had been substantially correct? A. Yes.

Q. From the time that the gauge was installed and to the present time, have you received daily from the observation station their reports on the flow in Burro Creek?

A. Yes; we have not received the gauge readings every day. That is, our problem is mainly high flows, however, we have received gauge readings every four or five days, and in the intervening days we received a report such as the normal flow, something that would serve our purpose.

(Testimony of Roland F. Kaser.)

Mr. Wilmer: Mark that, please.

(Thereupon, the document was marked as Defendant's Exhibit K for identification.)

Mr. Wilmer: I hand you Defendant's Exhibit K for identification. I am not sure whether this is a fair question or not. Do you recall if that is the rating curve, did you say?

A. Yes; if I could check it with the copy of what I have here.

(The witness checks over documents.) [262]

A. Yes; that is correct.

Q. Will you state what this is, please, then, Mr. Kaser?

A. We call that a rating table for the Burro Creek staff gauge. That is a table where the curve would be a diagram to show the curve line of the cross section.

Q. The first column of figures which has as its first figure .25 feet. What does that represent with respect to the gauge?

A. Well, that is the elevation of the water surface where—that is the elevation of it on the gauge staff and the graduations.

Q. In other words, reading on the .25 feet on the gauge would indicate 5 second feet and also indicate 224 gallons per minute?

A. Yes; five-tenths of a second——

Q. I mean five-tenths of a second foot. That reading of .5 on the gauge would indicate 10 second

(Testimony of Roland F. Kaser.)

feet? A. Yes, sir.

Q. And 4,488 gallons per minute? A. Yes.

Q. And a reading of 1 on the gauge would indicate 30 second feet per minute or 13,465 gallons per minute? [263]

A. 30 second feet. Don't put the "per minute" on there.

Mr. Cox: In this calculation—pardon me, on voir dire—this calculation is based upon your measurements at Burro Creek as to what that would be on the gauge?

A. Yes, sir.

Mr. Cox: No objection.

Mr. Wilmer: I might say for the purpose—this is being introduced for the purpose of testimony which is to follow as to the readings on the gauge. We offer it in evidence.

Mr. Cox: No objection.

(Thereupon, the document was received as Defendant's Exhibit K in evidence.)

Q. (By Mr. Wilmer): Why does the amount of gallons per minute increase from 224 gallons per minute at .25 feet, to 4,488 gallons per minute at .5 feet?

A. Well, that is due to the—as the elevation of water surface increases, the width of the channel increases rapidly and the velocity increases as the square of the increase, so that the curve is not a straight line, it is a curved line.

Mr. Wilmer: Cross-examine. [264]

(Testimony of Roland F. Kaser.)

Cross-Examination

By Mr. Cox:

Q. Mr. Kaser, now just where on the Bagdad sump were those gauges installed? Let's pick one of these pictures. Do your pictures here show this?

A. The gauge is not—was not installed at this time. However, it is right on this corner right there (indicating).

Q. Let's see if we can find a better picture.

A. There is a picture that shows the pump intake would be better.

Q. Is that better?

A. Yes. It is right on the—mounted on the bracket right on the corner of this rock.

Q. All right. Let's just mark that Plaintiffs' Exhibit 2 in evidence with a "G" for gauge where that is mounted, if you will, please, sir.

A. (Witness complies.) It is mounted vertically and enters the water about that shape.

Q. Referring to Defendant's Exhibits I and J in evidence, the pictures that you took that shows water flowing over on the left-hand margin of the picture, that is from their sump, is it not?

A. That is right.

Q. If there is any flow there, does the [265] water flow over that?

A. Well, that shows the surface flow. Now, this is a gravel bar here and it is entirely possible for an appreciable amount of water to be going through it.



(Testimony of Roland F. Kaser.)

Q. What is the nature of the bed of Burro Creek?

A. Well, it is just a river bed, typical river bed material. It is loose rock and boulders and gravel and it is all porous.

Q. Does that flow primarily through pretty solid rock in the surrounding country?

A. Well, the bed of the stream as to solid rock is down below the actual water surface. I don't know how far, but there is loose material in the bed.

Q. There is loose material in the bed?

A. Yes.

Q. You don't know how much?           A. No.

Q. Have you observed Burro Creek in flood times?

A. Yes; two weeks ago, that was on the 24th of February, I was there.

Q. How long have you been getting information on Burro Creek?

A. Well, I actually started the observations [266] in connection with our flood warning system in December, 1946, and while we had no gauge, we received reports on estimated increase of the flow.

Q. How high does that flow up on the bank?

A. Well, the flood that I came over last August, on August 10th to observe, it had been reported to me that the water had come, the surface had come up between six and seven feet, and while I didn't actually run levels at the time, I was there on August 10th. I stood at the water's edge and could see

(Testimony of Roland F. Kaser.)

it was above my head on the bank where the top of the debris had lodged.

Q. Could you see evidence of prior floods?

A. At higher than that, oh, yes.

Q. The floods in Burro Creek, in fact, go up to as high as 20 feet, don't they? A. Oh, yes.

Q. And is it possible that with a flooding condition of that type to install any type of a dam or retain—

A. Well, it is possible if you want to go to enough expense. That is the limiting factor there, is the structure that can be built.

Q. To withstand those floods?

A. To withstand those floods. However, [267] probably immaterial, but it is much cheaper to clean out the sump than to build something that would stand any flood you might get in that type of stream.

Q. Showing you Defendant's Exhibit D for identification, the pipe shown there has been testified to be a two-inch galvanized pipe. To give you an idea of the size, and you can see the grass. Calling your attention to the point where the arrows are, the narrow portion being the inlet that leads into this sump. From that picture, can you determine, assuming that the arrows, which are approximately one foot wide and four inches deep, what water is flowing in there, taking into account the position of the grass and other things that you can see there?

A. I don't believe that I can from this photograph. If I had observed the site, then I could relate

(Testimony of Roland F. Kaser.)

the actual observation to the picture and I probably would be able to, but from this picture I would not be able to estimate the velocity.

Q. Assuming, Mr. Kaser, further that there would be no visible flow at that point, according to the witness, would that have any bearing on how much water was going into that sump? [268]

A. Well, since apparently from the looks of these surroundings and what I know about the Burro Creek channel, I would say there might be an infloat to this sump from underground sources coming actually around here and not necessarily through that little opening where the water is.

Q. From your testimony, through that opening would you say there was any appreciable amount of water coming in through that?

A. It is difficult to say from this photograph. They may be shadows——

Q. Assuming there is no visible flow.

A. No visible flow. I would not like to make any estimate on what the flow would be. If there is no visible flow there, it would be very small.

Q. In fact, it would not be over probably 20 to 25 gallons a minute at the most?

A. I presume that would be——

Q. The maximum?

A. If we can assume there is no visible velocity to the water.

Q. In the summer I believe that you—you say you put it in in '47?

A. You mean——

Q. Started to checking Burro Creek. [269]

(Testimony of Roland F. Kaser.)

A. No; that was in December, '46.

Q. December, '46. Was there water in Burro Creek in '47, in the summer of '47, flowing water?

A. I didn't make any visits to Burro Creek during the summer of '47.

Q. Did your report show any water in Burro Creek in '47?

A. The reports indicated that the flow was about the same as it was in December, '46, when I observed it, and at that time I estimated about five second feet flowing out of the pump.

Q. And those were reports made by the—or the man that was representing you, or sent you the reports from the Bagdad Corporation?

A. Yes; he reported the normal flow, which means no change.

Q. This summer?           A. Yes.

Q. Did your reports show, during the summer of 1948, a normal flow all summer?

A. No. During the latter part of July they reported some flood rises and also during, as I said, in the morning of the 5th of August, they reported the water level was up six feet. On the morning of the 6th of August, it was up two feet above [270] normal.

Q. Then the pictures that you took here were immediately following the flood?

A. They were on the 10th. They represented a part of the recession from that very flood. They were still a little above normal for that time of year.



(Testimony of Roland F. Kaser.)

Q. Did your reports show that the flood in Burro Creek was below normal at any time in the summer of '48?

A. Yes. From informal reports that I had, I understood that the flow was quite low in the first part of July and the latter part of June. You see, that is typical of all of the streams in this general area.

Q. And you say that the flow shown from Defendant's Exhibits C, D and E, and Plaintiffs' Exhibit 6, would indicate a normal flow for Burro Creek?

A. Well, due to the intermittent nature of the flow in Burro Creek; that is, the low water flow, I couldn't say anything about the points that I just actually observed, because, as I understand it, the flow—a part of it is underground flow in different parts of the stream and it will flow on the surface for a certain distance and then it may flow through the gravel and then [271] reappear again, so I have never seen these points that are shown by these three photographs. These photographs here, I would say——

Q. Indicating Plaintiffs' 6.

A. ——was below the normal, yes, Plaintiffs' Exhibit 6 would indicate below normal flow.

Q. Would you say considerably below normal?

A. Well, yes, I would.

Q. And that is speaking of the water that is coming downstream from the sump?

A. Yes.

Mr. Cox: That is all.



Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Wilmer: Mr. Adams.

A. D. LON ADAMS

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. What is your name, please?

A. A. D. Lon Adams.

Q. Where do you reside?

A. I am residing at Bagdad. [272]

Q. What is your business?

A. Superintendent of Schools.

Q. What area do you have under your supervision?

A. Bagdad School District No. 20, Yavapai County.

Q. Do you have any hobby, Mr. Adams?

A. I do.

Q. What is that?

A. I have two of them, prospecting and hunting.

Q. In the summer of '48, Mr. Adams, in connection with your hobby of prospecting, did you have occasion from time to time to go to Burro Creek?

A. I did.

Q. You are familiar, of course, with the crossing that is known as the Kingman Cut-off Crossing?

A. I am.

(Testimony of A. D. Lon Adams.)

Q. Through the summer of '48, how many times would you say you had occasion to cross there?

A. Three different times.

Q. Do you recall when it was? A. Yes, sir.

Q. Would you tell us?

A. I crossed in the early morning of May, [273] I was down at some little claims there that Mr. Belnap, Ora Belnap and myself staked out. I happened to be down there with two friends of mine down in Phoenix, Mr. and Mrs. A. L. Morris.

Q. Later in May did you have occasion to be out there?

A. I did. It was about the 6th day of July. On that particular occasion I was returning from Kingman where I had been inspecting some War Surplus property that I was interested in acquiring for my school.

Q. On that occasion did you see others cross the creek at that point?

A. No, I just crossed the creek at that point on that particular occasion.

Q. Do you recall, Mr. Adams, what the condition of the water was at the crossing?

A. I do.

Q. What was it?

A. There was water at the crossing. I noticed that in particular at the crossing when it dips in slightly, that there was water practically up to the running board, that is up to the lower part of the body of my '46 Dodge Sedan, and I noticed on the

(Testimony of A. D. Lon Adams.)

ripple, the water ripple on my right downstream that there was running water over the ripples. [274]

Q. Do you have a recollection, Mr. Adams, as to approximately how wide the stream of running water was?

A. Well, I couldn't say exactly. Just at the crossing it looked to me like it was probably spread out over an area of probably 20 feet or so.

Q. And do you recall how deep it was, or do you remember?

A. Observing from just driving through, it looked to be several inches deep. I wouldn't know exactly.

Q. Then did you have occasion to go there again, Mr. Adams?      A. I did.

Q. When was that?

A. That was about July 24th and 25th.

Q. What was the occasion for your going there then?

A. I had an appointment with Mr. Mort Gimbal, a person who is engaged in mining in Yavapai County, and Mr. E. A. Girard, and a mutual friend, to go over and look at some property in Mohave County at the Esperenza Mine, which is owned by Mr. Ed Hansen of Kingman. We went there to make an inspection of that mine with the idea of, perhaps, a Mr. Gnice being interested in taking a [275] lease on it. That is out in the South Wallapai area down in what is known as Cedar Valley.

Q. To what extent did you have an opportunity

(Testimony of A. D. Lon Adams.)

to observe Burro Creek and the water in it at that time?

A. We crossed Burro Creek going into this mine en route to this old mine over in Mohave County out west of Yucca, and on the next day, on a return trip, we also had occasion to cross Burro Creek at the Kingman Crossing again.

Q. Do you recall the water condition at that time?      A. I do.

Q. What was it?

A. It was in about the same condition at that time as it was when I previously crossed it. It was slightly lower, perhaps, but not any material difference.

Q. That was on your trip over and on your trip back?

A. On my trip over and back, over one day and back the next day.

Q. Are you familiar with the Burro Creek bed or canyon below the crossing, Mr. Adams?

A. Not for any length of distance, down perhaps three or four hundred yards, probably 250 yards, [276] maybe, just down in where it starts into the gorge, the box.

Q. You know that as a matter of fact, that below the crossing, at least for some distance, it comes out onto bedrock?

A. I wouldn't necessarily say it came out onto bedrock, because I don't know for sure. I do know the water comes up here and crosses, and that runs through that particular area.

(Testimony of A. D. Lon Adams.)

Q. And enters this gorge?

A. Yes, the gorge comes through there, starts to form.

Mr. Wilmer: Cross-examine.

### Cross-Examination

By Mr. Cox:

Q. You and your partner are interested with Mr. Dickey there and get their water from Bagdad, aren't you?      A. I am not.

Q. You are not. Are any of your interests—are you getting any water other than for the school at Bagdad?

A. I am for my house, which I call my residence.

Q. The school does not pay anything for water?

A. We do not. [277]

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Wilmer: Mr. Bogart.

### ROBERT C. BOGART

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

### Direct Examination

By Mr. Wilmer:

Q. What is your name?

A. Robert C. Bogart.

Q. What is your occupation?



(Testimony of Robert C. Bogart.)

A. I am a surveyor.

Q. And by whom are you employed?

A. Bagdad Copper Corporation.

Q. Were you working for that Company in August of last year? A. Yes, sir.

Q. Along about the 4th and 5th of August, what were you doing, Bob?

A. I went to Burro Creek to make a preliminary survey for a damsite.

Q. You know where the sump is in the creek?

A. Yes, sir. [278]

Q. You know where the sump is in the creek?

A. Yes, sir.

Q. With respect to that sump, where were you making a survey?

A. About a mile and a half upstream.

Q. And who was with you?

A. E. A. Girard, Jr., and Louis Siegert.

Q. You packed in, did you? A. Yes, sir.

Q. Now, do you recall anything unusual happening one night there?

A. Yes, sir.

Q. What was it?

A. We were washed out. We were camped in the creek bottom and, I'd say about four or five feet above the channel, about 10:00 o'clock that night the water came through our camp, so we moved to higher ground, I would say 10 or 12 feet higher on up to a ledge, and about 11:30 or 12:00 that night, it was lapping at the toes of our sleeping bags.

(Testimony of Robert C. Bogart.)

Q. Were you, as a matter of fact, able to get back to Bagdad the next day?

A. No, sir. We climbed out of the canyon that night and about 600 feet up, and camped there until about 7:00 o'clock the next morning, and [279] walked back to the Boulder—Burro pumping station, and we were unable to cross the creek.

Q. That was because of what?

A. The flood.

Q. Did you lose any part of your camping equipment?

A. Yes, sir.

Q. Were you able to get anything to eat that day?

A. We were about 10:00 o'clock. Mr. Kelsey is the pumping man there, he threw us a line across the creek and then we pulled a telephone wire across and he slid us some breakfast, you might say, across to us that way.

Q. How did you get back ultimately?

A. Well, later that afternoon the water was going down some and we left all of our equipment on the opposite side and we waded about waist deep or deeper in places by hanging onto the—we call them water moodies, or air weed, and waded across that way.

Mr. Wilmer: Cross-examine. [280]

(Testimony of Robert C. Bogart.)

Cross-Examination

By Mr. Cox:

Q. Now, the water runs quite rapidly in that flood? A. Yes, sir.

Q. You had been camped in the creek bed?

A. Yes, sir.

Q. And then you finally moved up about 11 or 12 feet above the bed? A. Yes, sir.

Q. The water was right up about that high, you say?

A. That was the second rise about 11:00 o'clock.

Q. Now, that was about 11:00 o'clock at night?

A. Yes, sir.

Q. Then the next night is when you ate?

A. No, the following morning.

Q. It was the following morning that you got out and they slid you breakfast?

A. Yes, sir.

Q. When did you cross?

A. That same afternoon about 3:30 or 4:00 o'clock.

Q. About what time of the night would you say that this came up, the flood came up? [281]

A. There was two rises.

Q. Well, the first rise.

A. Well, I'd say about nine o'clock.

Q. And then about three or four o'clock the next afternoon you crossed? A. Yes, sir.

Q. So between nine o'clock at night, the flood—the water came up to first six feet and then eleven

(Testimony of Robert C. Bogart.)

or twelve feet, and then by three o'clock the next afternoon it was down at least low enough so that you could go across it without being washed downstream?

A. There is a condition there that enters into it. The damsite I was surveying was the narrowest part of the canyon, naturally, and the point where the pump station is, is quite wide, and it is spread out over a considerable distance.

Q. Did you see the water there the next day?

A. No, sir.

Q. And that was—when was that? Was that the 5th, you say, of August?

A. We went up there on August 3rd, and surveyed as much as we could on August 4th, and that was the day, that very night.

Q. The night of August 4th?

A. Yes, and the morning that would carry [282] over.

Q. And at the time you camped down on the creek bed, did you observe the flow of the creek at the time you camped?

A. Yes, we, the morning that we went up there on the 3rd was quite cloudy and drizzling rain, and we didn't know whether to go or not. We thought, well, maybe it was just one of those summer things, and it would pass over, so Mr. Kelsey and Louis Siegert—

Q. You did observe the flow where you camped?

A. Sure, went swimming in it.

Q. Went swimming in it and the flow, how wide was the creek bed there at that point?

(Testimony of Robert C. Bogart.)

A. Where?

Q. Where you camped?

A. Well, pretty rough. It kind of varies. It has no pools, but the main channel, I'd say, is 30 or 40 feet wide.

Q. Is there any place there where it is flowing over rocks at that point?

A. Oh, yes, it is in and out.

Q. If you are surveying a damsite there is bed-rock right close to the creek?

A. Absolutely.

Q. And is there a point there where you did observe water flowing that day, on the third [283] day, I am talking about?

A. Surely.

Q. How deep was the water flowing there, I don't mean in the pools?

A. That is a little bit out of my line. I couldn't say at any one particular place there.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

### C. S. STAGGS

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

#### Direct Examination

By Mr. Wilmer:

Q. What is your name?

A. C. S. Staggs.



(Testimony of C. S. Staggs.)

Q. Where do you live? A. Bagdad.

Q. What is your occupation?

A. Well, I am on the construction gang on the surface.

Q. Pardon?

A. I am on the construction gang on the surface. I have been in charge of some of the building. [284]

Q. You are employed by Bagdad?

A. That is right.

Q. In the summer of '48 did you have occasion to go to Kingman on a number of occasions?

A. I did.

Q. How many times? A. Three times.

Q. And what was your business in going there?

A. Well, we had purchased a building at Kingman and I went up to take it down and move it to Bagdad.

Q. Do you recall the dates when you went up there? A. I do.

Q. What were they?

A. I went up on the 16th of July.

Q. And what route did you take going up?

A. We went up on what we call the Kingman cut-off.

Q. Did you go back the same way?

A. Yes, sir.

Q. Then when did you go up again?

A. About three or four days later.

Q. And did you come back the same way?

A. After the job was completed.

(Testimony of C. S. Staggs.)

Q. No, I mean those three trips. [285]

A. Each of the three trips were over the same route.

Q. When was the job completed?

A. About the 14th of August, I believe.

Q. Do you recall the condition of the water at the Kingman Crossing on Burro Creek?

A. I do.

Q. What was it on the first trip?

A. Well, just roughly, just looking at it as we crossed the creek, I would say it was possibly three to five inches deep and possibly five feet wide.

Q. Was that at the crossing or away from the crossing?

A. Just below the crossing.

Q. What was the condition at the crossing?

A. The water was under the running board of our car.

Q. Was that true on each of the occasions when you went up there?

A. Yes, sir.

Mr. Wilmer: Cross-examine.

#### Cross-Examination

By Mr. Cox:

Q. You say the water was under the running board of your car, I didn't quite understand? [286]

A. Up to the bottom of the running board.

Q. Up to the bottom of the running board?

A. Yes, sir; that is right.

Q. And the ruts where the cars go through would make that lower, you say, three to five inches deep?

(Testimony of C. S. Staggs.)

A. That is right, right at the crossing, the car ruts.

Q. Do you know how much water there was at any time on down the river a few miles anywhere the Zannaras property?      A. No, sir.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Wilmer: Mr. Davis.

### GEORGE H. DAVIS

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

#### Direct Examination

By Mr. Wilmer:

Q. What is your name, please?

A. George H. Davis.

Q. You live at Bagdad? [287]      A. Yes, sir.

Q. And are you employed by the Bagdad Company?      A. Yes, sir.

Q. How long have you lived there, Mr. Davis?

A. I first hired out to Bagdad in '36, January.

Q. And have you lived there ever since?

A. Except a couple of occasions when—one occasion when the mine was shut down I was gone for a year or a year and a half while the mine was closed.

Q. Are you quite familiar with Burro Creek, Mr. Davis?

(Testimony of George H. Davis.)

A. Well, to a point of crossing and picnics.

Q. Where do you go to picnic?

A. Well, we used to go down Burro Creek crossing or on the Kingman Road.

Q. Would you picnic right at the crossing?

A. Well, just across the creek there is some big trees and we generally picnic there and swim and play on the playgrounds there.

Q. During the entire time you have lived there, Mr. Davis, have you regularly gone fishing in Burro Creek?      A. No, sir.

Q. Have you fished there at all?

A. Yes—well, not with regular tackle, with [288] a hook and a piece of string just merely to kill time. When we went on a picnic we put a fishhook on a string before we left for somebody to try.

Q. Have you gone swimming there?

A. Yes, sir.

Q. Where is the swimming places?

A. Well, there is some little pools down there, I don't know how far it is. It seems like maybe a couple, three hundred yards, something like that, below the crossing.

Q. Below the crossing, and on down, is it rather more of a rocky canyon-like formation than above, or do you know?

A. Yes, it is. It kind of drops off big rocks. You can't see very far down, but you can look up the canyon for quite some distance.

Q. Mr. Davis, last summer did you have occasion

(Testimony of George H. Davis.)

in your employment to go to Kingman a number of times?      A. I did.

Q. Why would you go there?

A. I drive a ten-wheel truck. I may send men any place they decide they want to get something, and I was over there hauling a building back. I'd go through there empty. If the load was larger and I could make it with the load on the climb, then I'd go around by Prescott, so I'd go through [289] there empty and come back through Prescott loaded.

Q. How many times did you go up?

A. Well, I don't know exactly, something like three or four times, I think four times.

Q. Do you recall the condition of the water at the Kingman Crossing?

A. Well, I know when I crossed there the water was further across than the length of my truck, which is better than 20 feet long, and it is deep enough in there that you darsent stop that truck in there because it had rocks in there big enough to give you trouble to get out again.

Q. Do you remember whether or not there was a stream of running water below the crossing at all times?

A. Yes, sir. You could see the water from the cab of the truck looking downstream.

Q. Do you know of one particular occasion, Mr. Davis, when you recall you had to wait to wade the stream?

A. I do. There was a man had a little truck



(Testimony of George H. Davis.)

and he had one of them little hand wagons. I call them an orchard pump, and he had these fellows standing in the crossing, standing out on the creek pumping out there. There is no passing anybody at the crossing, so you have to stay there and [290] wait to get across, so I stayed there and waited to get across.

Q. Do you have any recollection of looking downstream, as to about how wide the stream of water was?

A. Well, you can see the water running in through the rocks there on, six or eight feet wide, I guess.

Q. This was in July and the fore part of August, 1948? A. Yes.

Mr. Wilmer: Cross-examine.

### Cross-Examination

By Mr. Cox:

Q. When did you last picnic there, Mr. Davis?

A. Oh, that was in, some time about, '39 or '40. I believe it was—must have been '39. I was down there with the family picnicking and actually took a trip down there to picnic.

Q. That was the last fishing that was done there? A. Yes, sir.

Q. You have any friends fishing in there recently?

A. Well, not that I know of. I don't know. [291] I don't get out to do much fishing. I don't have

(Testimony of George H. Davis.)

time and I don't follow fishing. I don't have time to set around and do that.

Q. Do you know anything about the water on downstream several miles of Mr. Zannaras' place?

A. No, sir.

Q. You don't know whether there is any water there or is not?

A. I don't even know his place down there, I haven't been over a hundred yards.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

### G. A. KELLIS

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

### Direct Examination

By Mr. Wilmer:

Q. What is your name, please?

A. G. A. Kellis.

Q. And where do you live?

A. I live on Burro Creek.

Q. What is your occupation, Mr. Kellis?

A. Well, when I ran pumps, water pumps [292] on Burro Creek was for the Bagdad Mine.

Q. You had charge of the pump down at the Burro Creek which takes the water out of Burro Creek and pumps it up the hill, is that right?

A. I do, yes, sir.

(Testimony of G. A. Kellis.)

Q. How long have you been there?

A. I went there on the 24th day of August in '45, I believe.

Q. And do you do anything besides that, Mr. Kellis?

A. Well, occasionally I go fishing down the creek or up in the hills sometimes.

Q. Pretty good fishing there?

A. Fairly good at times when you catch anything.

Q. Mr. Kellis, included with your duties as caretaker for the pumps since August 8th or 9th, '48, have you had the job of observing daily the height of the water on the gauge in the creek?

A. Yes, sir.

Q. I say, has that been a part of your job to do that?

A. Been a part of the job.

Q. Do you live there yourself?

A. My wife lives with me.

Q. You and she, one or the other, are there [293] all the time?      A. Yes.

Mr. Wilmer: Mark this, please.

(Thereupon, the document was marked as Defendant's Exhibit L for Identification.)

Q. Mr. Kellis, I am going to hand you Defendant's L for identification. Is that in your handwriting?      A. Yes, sir.

Q. And is that a record of your readings of the gauge beginning with September 1st and concluding

(Testimony of G. A. Kellis.)

with February 28th of '49?      A. Yes, sir.

Q. Now, I note that in the first column; that is, the top of the first column, there is the words "September Water Record," '48. Immediately below that there is 15. What do these represent, the days of the month?      A. Days of the month, yes, sir.

Q. And the figures immediately below that represent—      A. Gauge of the water.

Q. Gauge reading?      A. Yes, sir.

Q. Now, I notice in the first, that is, column readings of 1 to 15, and in some of the [294] others there appears to be a decimal point or reading for September, would be 2.0. That actually should be .2, should it?      A. Yes, sir.

Q. And the one that reads .18 should actually be point—I mean 1.8 should actually be——

Mr. Cox: Just a moment, pardon——

Mr. Wilmer: What I am trying to say is somebody made a mistake and stuck some decimal point in there where it would make the reading far higher than it should be——

Mr. Cox: Well, let the——

Q. (By Mr. Wilmer): Will you state whether those decimal points that are on there were put there by you, Mr. Kellis?      A. Yes, sir.

Q. The decimal points I am referring to, I mean the points for September 1 should actually be what?

Mr. Cox: Just a moment. I object to the form of the question. Let him just tell what it should be. If he did put it there, let him say he did.

The Court: Who prepared this document?

(Testimony of G. A. Kellis.)

Mr. Wilmer: Mr. Kellis did, but I can prove by another witness, your Honor, that these [295] decimal points were put on there by error through a clerk in the office in copying this. We have copied a typewritten copy of this transcript there just for the purpose of simplifying the reading of it. The first day of September as it is on here, reads, 2.0, which would be manifestly to our benefit to leave it that way, but it is actually .02 rather than——

Mr. Cox: Well——

Mr. Wilmer: I can prove it by Mr. Dickey.

Mr. Cox: Would you let me ask him a question?

Mr. Wilmer: Let me conclude my cross-examination.

Mr. Cox: I say, then, just ask him, then, and don't testify for him.

Q. (By Mr. Wilmer): What time of day were those readings made, Mr. Kellis?

A. They varied. Some days I got down there at seven o'clock some mornings, always in the morning, in the fore part of the morning where I'd read the gauge, and it was transferred then to my calendar, the reading was on the gauge, seven or eight o'clock in the morning.

Q. All right. The figure which appears below the date indicates the height of the water on the gauge in the creek? [296]

A. Yes, sir; that is right.

Q. And each one of these readings of the gauge should have a decimal point in front of it, is that right?

A. Yes, sir.



(Testimony of G. A. Kellis.)

Mr. Wilmer: We offer Defendant's L for identification in evidence.

Mr. Cox: Might I understand, Mr. Wilmer, there should be no decimal points on this, and they should be considered hundredths?

Mr. Wilmer: This is what it should be.

Mr. Cox: There is no objection, with that understanding.

(Thereupon, the document was received as Defendant's Exhibit L in evidence.)

Water Reading in Burro Creek

September Water Record

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Gauge Reading	.20	.18	.20	.22	.20	.20	.18	.18	.22	.20	.22	.24	.22	.22	.24
Date	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gauge Reading	.30	.32	.30	.30	.30	.32	.30	.32	.34	.34	.34	.32	.32	.34	.32

October Water Record

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Gauge Reading	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.33	.32	.33	.32
Date	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gauge Reading	.32	.32	.33	.90	.92	.90	.90	.90	.80	.80	.80	.80	.80	.80	.80

31  
1.00

November Water Record

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Gauge Reading	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80
Date	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gauge Reading	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.50	.50	.50	.50

December Water Record

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Gauge Reading	.60	.50	.50	.50	.50	.50	.50	.50	.51	.50	.50	.60	.60	.60	.60
Date	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gauge Reading	.60	.60	.60	.60	.60	.65	.70	.90	.98	.98	.94	.90	.90	.90	.90

31  
.90



Left water report														2723
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1.8	2.0	2.1	2.0	2.0	1.8	1.8	2.2	2.0	2.1	2.2	2.2	2.2	2.2	2.5
17	18	19	20	21	22	23	24	25	26	27	28	29	30	
32	30	30	30	32	30	32	34	34	34	32	32	32	32	
Left 19 x 8														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
32	32	32	32	32	32	32	32	32	32	32	33	32	33	32
17	18	19	20	21	22	23	24	25	26	27	28	29	30	
32	33	30	32	30	30	30	30	30	30	30	30	30	30	
Over 19 x 8														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
30	30	30	30	30	30	30	30	30	30	30	30	30	30	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	
30	30	30	30	30	30	30	30	30	30	30	30	30	30	
Over 19 x 8														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
50	50	50	50	50	50	50	50	50	50	50	60	60	60	60
17	18	19	20	21	22	23	24	25	26	27	28	29	30	
60	60	60	60	65	70	70	70	70	70	70	90	90	90	90





297C

March 1949

3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Feb 1949

3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

*Deft* *L*  
 Case No. *221 But.* Admitted and filed March 4, 1949.

MARKED FOR IDENTIFICATION  
 MAR 4 1949  
 ADMITTED AND FILED  
 MAR 4 1949

W H LIVERLESS, Clerk  
 UNITED STATES DIST. CT COURT  
 FOR THE DISTRICT OF ARIZONA  
 BY *William J. Larson*  
 Deputy Clerk



(Testimony of G. A. Kellis.)

Mr. Wilmer: Mr. Kellis, do you—pardon me—for the purpose of simplification, I would like, if I might, to attach to this exhibit and which will be his verifying the typewritten compilation of this. This, however, carries over to December, does not carry through January and February, which he didn't regard as being important.

Q. Mr. Kellis, do you recall the flood which occurred on the 5th or 6th—4th or 5th of August?

A. Yes; I do. [297]

Q. And do you recall the predicament that Mr. Bogard was in? A. Yes, sir.

Q. At about that time had the flow of water in Burro Creek been normal or below normal?

A. Well, it had been normal, oh, for some period; that is, I will say on the first of August we had a little rise, a flash came on down each day with a gain of water up until then, until the night of the 4th, I believe, and then for a few days afterwards.

Q. You have been down there at that point how long, Mr. Kellis?

A. I have been there since August of '45.

Q. How long have you been familiar with Burro Creek? A. Since that time.

Q. Mr. Kellis, immediately below the sump out of which the water is drawn, is there a place where—strike that. When the water in Burro Creek is low or down to just normal summer condition, will the water flow over, or overflow out of the sump?

A. Well, no. Immediately below, I will say a couple of hundred yards, why, the water comes to

(Testimony of G. A. Kellis.)

the surface and there is always water flowing [298] below there, evidently it goes through the sand and gravel.

Q. In what quantities?

A. Well, I couldn't say.

Mr. Wilmer: Cross-examine.

### Cross-Examination

By Mr. Cox:

Q. You say you took these readings every morning? A. Yes.

Q. Is there any difference between the flow on Burro Creek in the mornings or any different times of the day, night and day?

A. Well, unless there is a flash flood or something of the kind to make a difference, and it is always higher in the mornings, early in the mornings, I suppose, due to less evaporation than there would be in the afternoons.

Q. And just a normal condition, the highest flow is in the mornings?

A. Evidently, yes, sir.

Q. Did you take any readings in the afternoons?

A. No, I don't believe I have. I always take them in the mornings. I believe a few times, I [299] can speak of one that I can recall to mind, that in the afternoon, in the morning it was low, because of a flash flood during the daytime, and I read the gauge in the afternoon.

Q. That was only in the event of a flash flood?

A. That is right.

(Testimony of G. A. Kellis.)

Q. And on a normal flow, the flow was considerably less in the middle of the afternoon than it would be earlier in the morning?

A. Yes, flash up there in the night, always does that.

Q. Are you on duty there 24 hours a day?

A. My wife or I, yes, sir, one or the other.

Q. One or the other? A. All the time.

Q. Are the pumps there working 24 hours a day, Mr. Kellis? A. No, not all the time, no.

Q. Was there any time in the last four or five months when they have not been working?

A. Well, only when the creek was low.

Q. When was that?

A. Well, I can't state very sure what times it was.

Q. For how long a period were you shut [300] down?

A. Well, when the water would get low, why, we would—you see, our suction when it is so far down and then it interferes with the picking of water up when it gets that low, and then we have to shut down the pump until the water rises, or we don't get water in the pump.

Q. In other words, there were periods this summer when you would have to—your pump would get all the water out of the sump until it would suck air?

A. Yes, sir, would not get all of the water out, no, sir.

Q. You would get it to the point where your



(Testimony of G. A. Kellis.)

intake valve would suck air?           A. Yes, sir.

Q. And then you would have to wait for the water to fill back up in the sump?

A. Yes, sir.

Q. Before you could start again, and how long were you shut down, Mr. Kellis?

A. Well, I couldn't say. It varies certain hours and——

Q. It takes several hours to fill back up and you can run it again?           A. Yes, sir.

Q. Now, the valve on your water pump [301] where you are taking it in, is that several feet below the surface there of the water normally?

A. Well——

Q. How far down is it?

A. In normal times I'd say it would be three feet below the surface of the water.

Q. And has that been cleaned out there so that the valve could go down as far as possible?

A. The motor can only go down at the end of the ladder, that is as far as that can go, and, of course, there is the suction on down a little.

Q. But there is a suction down below that?

A. Yes.

Q. And the end of the suction valve is several feet below the surface of the water?

A. I would not say the surface, about three feet.

Q. About three feet?           A. Yes.

Q. Now, is this, looking at that picture, you are familiar pretty much with the conditions around

(Testimony of G. A. Kellis.)

the sump, is the water there about normal, would you say, or is it low, or can you tell?

A. I just want to see what the date was.

Q. There is no date on it.

A. Well, I judge that that was [302] approximately normal, that is about normal, a little bit low, a little below normal. Probably that was taken when the water was at its lowest. I couldn't say for sure. I couldn't tell you until I see down below there.

Q. I was showing you Plaintiffs' 2. Showing you Plaintiffs' 6. If you saw this and I stated those were taken on the same day, would it help?

A. This is evidently the spillway from the pump.

Q. Here is the pump.

A. This is evidently the spillway there. Now, we pump until quite seldom we ever pump until the water would not run out of there, and when the water got low enough it barely would not run out, then we shut our pump down.

Q. Is that the point where your pump starts taking air?      A. Yes, sir.

Q. What size pump do you have there, Mr. Kellis?

A. We have a five-inch intake, I believe it is, I believe it is five inches, I would not be positive.

Q. Do you know how much water your pump pumps, the one there at Burro Creek?

A. Well, it is just an estimate, I suppose. [303]

Q. Well, taking from any figures of anything, how much it takes?

A. About 600 gallons, I guess, a minute.

(Testimony of G. A. Kellis.)

Q. How did you determine that?

A. Well, I think the pump is rated at 700 and evidently would not pump to efficiency at 700.

Q. How long have you been around Burro Creek, Mr. Kellis?

A. Since August 4th, 1945—24th.

Q. Have you been up and down the creek at all?

A. Some, yes, sir.

Q. Have you ever been down as far as Mr. Zannaras' place?

A. No, sir.

Q. Never have?

A. No, sir.

Q. Do you know whether or not it is possible there on the creek to build an artificial sump in order to take care of the water, to pump efficiently?

A. I couldn't say whether there would be.

Q. How high do the floods come in there, Mr. Kellis?

A. Well, since I have been there I have seen, I judge, eight feet, maybe ten. I have no way of determining it, just water marks on the—— [304]

Q. How high did it come there at the time the surveying party got caught?

A. Well, I believe that we estimated that was about seven feet, six or seven feet.

Q. Do you clean out your sump there?

A. The Bagdad Copper Company sends an outfit down there and cleans it out.

Q. Cleans out the sump?

A. Yes, sir.

Q. How deep is it down to the point where they strike rock?

(Testimony of G. A. Kellis.)

A. Well, just judging from the drag line when it was in there, I suppose when it is normal, I suppose it hits at least 15 feet.

Q. About 15 feet?

A. I judge so, yes, sir.

Q. Now, is your valve actually near the bottom of that?      A. No, sir.

Q. Do you recall seeing the two gentlemen sitting here last summer?      A. No, sir.

Q. Do you recall some gentlemen coming there in July and taking some pictures?

A. No, sir.

Q. Did you recall ever saying that you were [305] afraid you were running out of water in July?

A. Not that I remember of.

Q. Was that your opinion then that you were?

A. Well, the water was low, it was at the lowest ebb through July.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

### WALTER DAVID DEACON

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

#### Direct Examination

By Mr. Wilmer:

Q. Your name, please?

A. Walter David Deacon.

(Testimony of Walter David Deacon.)

Q. What is your occupation?

A. Chief electrician.

Q. For what? A. Bagdad Copper.

Q. How long have you had that occupation?

A. Since October, 1939.

Q. Have you done anything else there at Bagdad, Mr. Deacon?

A. In the last five years I have been weather observer for the Weather Bureau, and the last [306] two years as gauge reader for the Bureau of Reclamation.

Q. That is what type of gauge?

A. Well, the electrical gauges are meters in the substation, the temperature and the observation of water in the streams of the Santa Maria and Burro Creek and surrounding country.

Q. I believe Mr. Kaser testified about seeing you in Bagdad in August of last year?

A. Yes, sir.

Q. Did you go with him to the stream bed?

A. Yes, sir; Mr. Diamond, Mr. Kaser and myself.

Q. Under whose direction was the gauge installed that he testified to? A. Mr. Kaser's.

Q. In connection with the preparation of the flow curve? A. Yes.

Q. Did you do any work in connection with that?

A. No, I did not. That was up to the engineering department.

Q. Have you had occasion from time to time to observe the weather conditions—strike that. In the



(Testimony of Walter David Deacon.)

latter part of July, '48, will you state whether or not there was any unusual rainfall?

A. Yes, we had some rain in the last ten days [307] of July.

Q. Was it sufficient to reflect a rise in the curve?

A. Yes, we did. I have records if I can use them.

Q. Sure.

A. On the 20th of July, we had .55; 21st, .63; 22nd, .110. That is one inch and ten one-hundredths. On the 23rd we had .05, and then on the 25th—no, the 26th, we had .40.

Q. You have your record for August there?

A. Yes, sir, I have.

Q. Could you give us what the rainfall record for August was in the Bagdad area?

A. On August 1st, we had a trace during the night. On August 3rd, .55; August 5th, trace; August 6th, .02; August 7th, .41.

Q. Where is that gauge located?

A. Altitude 30 degrees and 36 minutes.

Q. I mean in respect to Bagdad.

A. In the lower part of the camp.

Q. In the camp itself? A. Yes.

Q. Mr. Deacon, without lengthening the matter too much with respect to the months of October and November, do your records reflect the normal or [308] above normal rainfall?

A. It was below normal rainfall in September. October, it was just about normal at .97.

Q. What about November?

A. November, we had none.

(Testimony of Walter David Deacon.)

Q. At the camp? A. Yes, sir.

Q. And what about December?

A. December was a very heavy month. We had 2.58 inches.

Q. Now, in the course of your work as observer, Mr. Deacon, are you familiar with the length of Burro Creek, or just familiar with it casually?

A. Just familiar with the pumping station, that area near the pumping station.

Mr. Wilmer: Cross-examine.

#### Cross-Examination

By Mr. Cox:

Q How much rain was there in July, the month of July—let's go on down while you are looking.

A. All right, sir.

Q. Do you have it there?

A. Yes, sir, for the last 30 years.

Q. What do you have for May and June, if you have it right there available? [309]

A. May, nothing; June, .10; July, 2.63; August, 1.03; September, .09; October, .97; November, none; December, 2.58.

Q. And you say you have this for the last—have you determined the normal rainfall for various months? A. Yes, sir.

Q. What is the normal rainfall for——

A. Not by the month, it is by the year. I have it here and it could be totaled up to get the normal.

Q. Then, what is the normal annual rainfall?

(Testimony of Walter David Deacon.)

A. The average is 15.09.

Q. For the year? A. Yes, sir.

Q. But you don't know how that is broken up, do you?

A. Only it is—that is the average taken ever since 1930.

Q. Maybe you can explain this to me. These are the months by years? A. Yes, sir.

Q. And you have shown each year what?

A. What the rainfall was each month.

Q. How rapidly does that rainfall reflect in Burro Creek, Mr. Deacon? [310]

A. That depends on the rain we have had previously.

Q. Then the rainfall in July, it has a great deal that has come out there at one time to form that flash flood that you testified to?

A. Well, in July you will notice we had a rain for three days without any particular raise in the creek, then we had .41 and then we had a flash flood.

Q. And no rain in November at all?

A. No, sir.

Q. Now, you observed the water in the streams, you say, of Boulder Creek, Copper Creek, and other creeks? A. Yes, sir.

Q. And how far, what area do you observe, Mr. Deacon?

A. Well, just to the point of the Santa Maria, we gauge at the bridge; at Boulder, at the Hillside Mine, and one at the Boulder Dam, that is seven miles from Bagdad.

(Testimony of Walter David Deacon.)

Q. Any water at all comes down the Bonanza Wash?

A. I wouldn't know the Bonanza Wash.

Q. You don't know the Bonanza Wash?

A. No, sir. [311]

Q. You are not familiar with it?

A. No, sir.

Q. You are not familiar where the Bonanza Wash and Burro Creek comes in? A. No, sir.

Q. You have not been near those properties?

A. Yes; I was there with Mr. Bogart. I surveyed the power line.

Q. When?

A. I have forgotten it; it was some time last year.

Q. Did you see Burro Creek at that time?

A. Yes, sir.

Q. Do you recall when that was?

A. No; not the date. I know it was in the summer.

Q. What was the average rainfall for the year—I mean what was the total rainfall for the year '48?

A. 9.22, and 2.58 of that fell in December.

Q. 9 and what? A. 9.22.

Q. 9.22. And 2.58 of that fell in December?

A. Yes, sir.

Q. So that 6.64 was the rainfall for the entire rest of the year? A. Yes, sir. [312]

Q. As compared to 15.09 for normal?

A. Yes, sir.

Mr. Cox: That is all.

(Testimony of Walter David Deacon.)

Redirect Examination

By Mr. Wilmer:

Q. Mr. Deacon, with respect to the reading of the gauge located in the camp at Bagdad?

A. Yes, sir.

Q. Do you know where the headwaters of Burro Creek are formed?

A. I have a general idea.

Q. How far back up in the country does it go?

A. Well, I would not want to answer that because I really don't know. I know just the general location of around Camp Woods and that area.

Q. It does rise back up in Camp Woods, in that country back in there?

A. Yes; it does.

Mr. Wilmer: That is all.

(The witness was excused.) [313]

EDGAR A. SCHOLZ

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. State your name, please.

A. Edgar A. Scholz.

Q. What is your occupation?

A. I am Superintendent of the Hillside Mining & Milling Company.

Q. How long have you held that position?

A. Since the latter part of June, '48.



(Testimony of Edgar A. Scholz.)

Q. Prior to that what were you doing, Mr. Scholz?

A. I was General Manager of the Red Gulch Mining Company at Zortman, Montana.

Q. What were you doing prior to that?

A. Prior to that I was engaged as geologist and engineer in charge of exploration for the Martin Zortman, Incorporated, at the Golden Sunlight Mine at Whitehall, Montana.

Q. How long were you there?

A. I was there from September, '45, the latter part of September, '45, to May, 1946.

Q. Prior to that what did you do? [314]

A. I was geologist for the United States Geological Survey.

Q. How long were you there?

A. I started in that work in September 15th, 1942.

Q. Preliminary to being with them, had you had some special training, Mr. Scholz?

A. Well, before that I<sup>e</sup> was about a year and a half, I was geologist for the Fisher Production Company at Cutbank, Montana. Prior to that I spent four years as engineering student at the Montana School of Mines at Butte, Montana, and graduated with a degree of Geological Engineer in '41.

Q. Now, in the present operation at Hillside, how many men do you have employed? A. 55.

Q. And that is what type of a mining operation?

A. Well, that is a narrow vein mine that we

(Testimony of Edgar A. Scholz.)

have, recovering lead and zinc, gold, silver values by flotation.

Q. In '44, Mr. Scholz, did you have occasion to visit the properties of Mr. Zannaras?

A. Yes, we did. I visited the property in the company of Mr. Anderson, C. A. Anderson, of [315] the United States Geological Survey, who is still stationed in Prescott, Arizona.

Q. What was the purpose of that visit?

A. Well, there was a dual purpose. One was to generally familiarize ourselves with the mining possibilities of the area, and the second was, as required by the Government for war effort, we were to determine the amount of any type of mineral in the general vicinity of where we were working, the amount that might be available and there was tungsten possibilities at Mr. Zannaras' place, and that was one of our reasons for being there.

Q. And what did your inspection consist of at that time?

A. Well, it was a very brief visit to just get a general idea of what the possibilities might be in the area.

Q. With respect to his properties, what did you inspect?

A. Well, we looked over that open cut development that Mr. Zannaras told us about and he explained some of the—what he had found there, and also there was a shaft started, and Mr. Zannaras was very interested in the shaft, he thought he had

(Testimony of Edgar A. Scholz.)

some ore there, and the shaft was down about [316] ten feet at that time.

Q. Now, was the mill set up?

A. I could not—I didn't visit Mr. Zannaras' millsite personally, but Mr. Anderson did go down there where the mill was set up, according to his statement.

Q. Have you been back to the property later, Mr. Scholz?

A. Yes; on February 24th I spent the day visiting with Mr. Zannaras, and on February 27th I was there also both at the mine and at the mill.

Q. Did you go to the open cut also?

A. Yes, sir.

Q. What year?           A. '48—'49, February.

Q. With respect to the condition or the situation existing at the open cut, did you observe any change there between its condition when you saw it in '44 and its present condition?

A. It was substantially in the same condition as it was in '44. Any work that had been done there would have been relatively a small amount. I could notice no real change.

Q. Just what does that open cut consist of, Mr. Scholz?

A. Well, it is a horizontal floor, more or [317] less a horizontal bottom cut into the side of the hill, and as the rock is taken out you move farther back in the hill, and it gets deeper or higher to the face of it and I would say—well, it is irregular shaped. It might be extended into the hill as far as 25—20

(Testimony of Edgar A. Scholz.)

to 25 feet vertically, and the height, from the level, the bottom of it to the top, of 15 or 18 feet, 15 feet, something like that.

Q. How abrupt is the rise of the hill?

A. Oh, 10 or 15 degree slope. It is not especially a steep hill.

Q. From your inspection of the area in '44 and your recent two inspections, or, I believe you did not go to the open cut the last time you were there?

A. Yes; I stopped there just briefly to look around to see if it was thought to be beneficial on a basis of the RFC report, to which we had access. It was thought to be a very, or quite a promising point there, or had some interest anyway, and so I stopped by there this time to see if there had been any more work done. There had not.

Q. From your experience, Mr. Scholz, the work you had done, both from the standpoint of [318] your geology, training as a geologist, and your work in practical mining operations, in your opinion would it be possible to estimate the possibilities of that body of ore as to the possible recovery from it and the possible amount of ore, the mineable value there?

A. Well, in normal mining practice you can assume a very small tonnage very closely associated to the workings and out-crops. There might be a small tonnage relatively, reasonably well assured. Now, I have never spent enough time on the property or exhausted enough, or sampled enough to know how pervasive the shelite is.



(Testimony of Edgar A. Scholz.)

Q. Let me ask you this, Mr. Scholz: Based on the ore exposed in this open cut, would it be possible, without further exploration, such as diamond drilling, or further exposure of the ore surface, ore bearing surface, to reach a conclusion as to whether or not the mine had practical possibilities as an economical mining venture?

A. It would be very problematical to say that it had sufficient ore. I think that is what you are getting at. It has no ore blocked out to warrant any large expenditure on equipment of any kind, particularly milling equipment.

Q. With respect to the shaft which you [319] observed, I believe you looked at that again?

A. Yes, sir.

Q. And did you this last time make an inspection of the mill involved?      A. Yes; I did.

Q. When did you do that?

A. On February 24th, 1949. I was there again on the 27th of February, 1949.

Q. Was Mr. Zannaras there on the 24th?

A. He was at the mine at that time and we—I had never been to the mill, and we talked a little bit about it, and he said I ought to go down and see that mill, so I was over there also to see the Pinafore Mine, I had time left, so I went on down.

Q. In your opinion, Mr. Scholz, as the mill is presently set up, is it acceptable as an economical operation?      A. No; it is not.

Q. Why not?

A. Because it lacks some of the things that



(Testimony of Edgar A. Scholz.)

would be needed for economical operation. One of the most important things that it lacks is a classifier, means of getting the controlled size of material to the gravity concentration section, and without that, the capacity would be [320] considerably reduced, and the manpower required would be excessive. The mill as set up has a small ball mill which handles an inch and a half to four-inch material, we will say, minus four inch, and even considering the lesser sizes of the material going into that mill, it would be impossible to grind more than 10 to 20 tons per 24-hour day. It would be a very difficult proposition.

Q. As it is presently set up, in your opinion, using, I believe Mr. Zannaras testified to using three and one half to four-inch mesh size at the head, as it is presently set up for operating, in your opinion, how much ore could be put through that in a day?

A. Between—from 10 to 20 tons, definitely no more than 20 tons on a 24-hour day.

Q. 20 tons in a 24-hour day?

A. 24-hour basis.

Q. Did you observe the tailings at the millsite, Mr. Scholz?

A. Yes; I had noticed a very small amount.

Q. Are you able to estimate the amount of tailings there?

A. There was—well, about, a very small amount, less than a ton.

Q. Now, with respect to the use of water in [321]

(Testimony of Edgar A. Scholz.)

mining, Mr. Scholz, do you use water at Hillside for wetting down the ore?

A. We do on occasions in a few places.

Q. And in connection with the operation of jackhammers? A. Yes, sir.

Q. The operation of the jackhammer in material that is difficult to work on, what is the maximum amount of water that would be used in any given period, eight-hour shift?

A. Not more than 50 gallons at the maximum.

Q. And with respect to the use of water for wetting down ore, is there any general rule with respect to it percentage-wise that is used?

A. No rule as to percentage, because miners don't know things by percentages, but wet the ore down enough to lay the dust, and from experience I know that would be—if you put one per cent water in it, the water added one per cent to it, it would be very, very wet, added water above—use it normally as in wetting down.

Q. Is it customary, Mr. Scholz, to wet broken ore at the bottom of a shaft?

A. Normally, it is not necessary because in drilling—the drilling water quite often is sufficient to wet the ore. [322]

Q. From your experience, Mr. Scholz, could you state whether there is ore or ore bearing faces exposed at the shaft there on the surface or in the shaft sufficient to permit an experienced miner to reach a conclusion as to the amount of ore body present especially susceptible to economic mining?

(Testimony of Edgar A. Scholz.)

Mr. Cox: Pardon me. Would you read that to me, please?

(The question was read by the reporter.)

Mr. Wilmer: Strike that.

Q. Will you state, Mr. Scholz, whether or not there is, either on the surface or in the shaft, sufficient ore exposed; that is, mineral bearing ore exposed sufficient to permit an experienced miner to reach a conclusion as to the amount of ore body present?

A. I am not in a position to state that there is or is not, or are the quantities of ore at the shaft. The amount of work done at the shaft is still quite limited. It is approximately estimated 40 to 45 feet deep, and with no workings off the shaft at all, so that speaking, without committing myself as to whether or not there is ore present, the amount of work done and the exposures on the surface are quite limited for the [323] purpose of blocking out any quantities sufficient for milling even in a small way.

Q. To determine how much ore is actually present, what, if anything, needs to be done?

A. I believe that some underground development work is needed, I believe that trenching and sampling of the surface to more definitely establish a body of ore, or prove that there was not a body of mineable ore.

Q. Until a mine, that is, a new mine is actually developed to the point where ore is blocked out and

(Testimony of Edgar A. Scholz.)

there is actual experience on the cost of mining, and the cost of milling, and so on, is it possible to express an authoritative opinion as to what it will cost to mine a given ore?

A. Yes; you can arrive, if you have the general dimensions of either the ore body or a block of ore sufficiently large to get a certain geometry or the shape of it, it is possible to arrive at a figure that will be within reason.

Q. That is as to the cost of mining?

A. As to the cost of mining.

Q. That is, if you know the texture and the type of the ore and the ore body present?

A. That is right. [324]

Q. Is it true or is it possible to take some section, as Mr. Zannaras has there, and form a reasonable estimate as to what it would cost to operate that mill in its present condition?

A. Yes; that is possible.

Q. How would you do that?

A. In a very general way. Well, if the mill were in condition to operate, a few days' operation would tell that better than any other way that you can have. Of course, it would be based upon—you would have to base it on, if his estimate were made before the mill was operated, it would have to be on the capacity of the machinery and the manpower needed.

Q. What I mean is this, Mr. Scholz: Until the mill was actually set up and put in operation where



(Testimony of Edgar A. Scholz.)

the bugs are discovered and everything was required, is it possible to——

A. Yes; following accepted procedure with test work prior——

Q. No. I am not referring to test work. I am saying without any test work and without the mill having run, and without knowing what it will take to make it run, is it possible to say what it will cost to operate?

A. Not with any degree of accuracy. [325]

Mr. Wilmer: Cross-examine.

The Court: We will have our recess for the afternoon.

(Thereupon, a short recess was taken after which proceedings resumed as follows.)

### Cross-Examination

By Mr. Cox:

Q. You were at the Zannaras property in '44?

A. To the best of my recollection, that is correct.

Q. And you visited the property with whom?

A. C. A. Anderson.

Q. And who is C. A. Anderson?

A. He is the principal geologist of the United States Geological Survey at the present time. He was at that time also.

Q. And did he visit the property to make a report, do you know?

A. No—yes and no; not to make an official report of the property, but in general terms, evaluate the mineral potential of the property regardless of



(Testimony of Edgar A. Scholz.)

the cost of extraction and there might be a source of tungsten.

Q. He was there to make a report?

A. Yes. [326]

Q. And you said, according to the RFC report, there seemed to be a very promising proposition there?

A. That was the most promising, one of the most promising areas, spots in the area.

Q. That was one of the most promising spots in the area? A. Yes.

Q. What do you mean by "in the area"?

A. That anyone knew of, that anyone had any reports on in that part of the, well, say, well that general area of ten square miles—twenty square miles, something like that.

Q. Wasn't that a report of the U. S. Geological Survey, rather than the RFC report?

A. I believe I stated that our ideas regarding the grade were based upon some assays taken from an RFC report by Bill Gohring and Maitland, or the RFC—Reconstruction Finance Corporation.

Q. They took samples there?

A. Yes, they took samples there and had Mr. Zannaras take some under their supervision.

Q. Do you know that they took samples?

A. I have had access to their report and their samples. They have assays in there showing what they took and Mr. Zannaras took with them. [327]

Q. You say you have access to that through what?

(Testimony of Edgar A. Scholz.)

A. Government agencies at the time. I had access to it at the time I was with the United States Geological Survey and at the time we visited the property then.

Q. Was there a U. S. Geological Survey report, you know?

A. There was a visit made by, I believe it was Dr. Krauskopf, and he was—Krauskopf was a geologist assigned to looking for tungsten for the war effort. That is one of the services of the U. S. Geological Survey. That was in, I don't recall at what time before that was or had been, but it was prior to our visit.

Q. And do you know how long he spent there?

A. No, he spent at least one night there. He went out one evening, at least he was out and cruised the ground with Mr. Zannaras with an ultra violet lamp.

Q. That is called a mineralite?

A. Yes—well, it may or may not be. That is one brand.

Q. Can you determine—can you tell with that light if there is tungsten?

A. You can't determine if there is tungsten [328] unless it is the type that fluoresces, shelite in this particular case.

Q. That is the particular type of ore he has?

A. Yes, that is it, supposed to be.

Q. How much time did you spend on the property, Mr. Scholz—well, in '44, how long were you there?

A. We were there a part of one day. I don't re-

(Testimony of Edgar A. Scholz.)

call. We didn't spend a great deal of time. We looked at the general set-up and the area and—on the basis of the RFC examination of grade, possible grade, made a general evaluation of the availability of tungsten for the war effort. I was approximately four or five hours in that area on the property or around it.

Q. On February 24th, how long were you there?

A. On the 24th I came—arrived at the mine about 10:30 in the morning and left to the shaft and went down the shaft with Mr. Zannaras and looked at the picking belt and small crusher he had there, and the general set up, and went out over the hills there which Mr. Zannaras was showing us he thought were promising areas and some of the potentialities of the property, and we left, parted company and left that part of the property about—I didn't check the time. [329]

Q. But during the daytime? A. Yes.

Q. And you were there during the day on the 27th? A. Yes.

Q. Had you ever been on the property at night?

A. No, I have not.

Q. Can you, with the ultra violet light or mineralite, can you make any better determination of what tungsten ore or shelite is there, quantities of shelite available at night than you can in the daytime? A. Yes, sir.

Q. Did you talk to Mr. Zannaras about coming down there at night?

(Testimony of Edgar A. Scholz.)

A. I would like—I told him I would like to see the property some time at night.

Q. And did he tell you it would be all right with him?      A. I believe he did.

Q. The fact is, he was anxious for you to look it over at night, wasn't he?

A. I think so. That was my impression.

Q. That was your impression, and the purpose for coming at night was so that you could determine the extent of the shelite over that area? [330]

A. Over an area, I think that was his idea.

Q. And you were anxious to see that also?

A. Yes, sir.

Q. And an examination at night like that would be quite revealing one way or the other, wouldn't it?

A. Well, let's say it would have contributed information as to areas to do some work in.

Q. And it would contribute information—it might contribute information as to possible or even probable extent of the ore, might it not?

A. In a general way, yes.

Q. And without that information it would be impossible to base an opinion, as a geologist, as to much of anything, isn't that correct?

A. Well, the shelite occurrences occur in a state of metaphoric schists and hornblende and Yavapai schist series, and you can follow that general trend of the favorable—what Mr. Zannaras has pointed out is a favorable zone in the daytime probably better than you can follow at night as far as general appearance is concerned. At night if you use an



(Testimony of Edgar A. Scholz.)

ultra violet light you would not follow much of anything unless, if you hit the area that didn't show shelite.

Q. But you can tell in those areas that you [331] had picked out in the daytime, you could tell a little more about it?

A. I would say it would give you some indication.

Q. Could you tell in the daytime in the vein in the bottom of the shaft anything about the shelite it contained?

A. No. We were—I saw no good—no piece of ore showing an appreciable amount of shelite. Mr. Zannaras and I tried, tried to pick up some pieces that were typical of the better stuff and we didn't have—well, we didn't find anything that we thought was especially good, but that happens in places, of course. I made no attempt on this examination—I made no attempt to determine whether there was ore on the property.

Q. But from the report that you had seen, the Government report you had seen——

A. Coupled with the geology of the area.

Q. The area, you thought that this was a very promising proposition?

A. Had sufficient promise to warrant further exploration.

Q. At the mill at Hillside, what mesh are you running there?           A. What mesh? [332]

Q. Yes.

A. At which we are making flotation recovery?

Q. Yes.



(Testimony of Edgar A. Scholz.)

A. At the flotation recovery it is about—I don't have any exact figures to bring to mind, but approximately minus 48 to 60 mesh.

Q. How many tons do you mill?

A. In grinding to that fineness, the feed that we feed to the whole mill, which is the main grinding—actually, it is the only grinding machine we have, feeding is very important——

Q. No, how many tons do you grind, how many comes out of your mill?

A. With half inch feed of Hillside ore, or minus a half inch going through a half inch screen going through the ball mill on Hillside ore, we grind up to 125 tons—125 tons in 24 hours.

Q. What would your tonnage increase if you had 10 mesh?

A. I don't know on that particular ore, but I suppose it would be in the range of 10, 12, 15 per cent—10 per cent—15 per cent.

Q. You are grinding now four times smaller than 10 mesh, four to six times smaller than 10 mesh?      A. Yes, sir. [333]

Q. And if you grind to 10 mesh you think it would increase the mill capacity only 10 to 15 per cent?

A. Well, that is because of the peculiarities of ball mills.

Q. I don't know anything about that.

A. Any operator who has been in the business very long usually, and especially around flotation plants, have a lot of trouble with smalls, or quite fre-

(Testimony of Edgar A. Scholz.)

quently have trouble with smalls. You do your best not to grind that fine and, oh, as much as 50 per cent of your ore would be ground a lot finer than you have any intention or have had to grind it in order to liberate the mineral particles, and because of that control and lack of efficiency, you might say, of a ball mill, you are going to get a large portion finer regardless of what you do, so that would not be the ratio according to the diameters of what it might seem to be.

Q. At Mr. Zannaras' place the ore does go through a crusher? A. Yes.

Q. And then it is fed into the mill?

A. Yes.

Q. It comes from the mill through a 10 [334] mesh screen?

A. I think it is approximately 10 mesh, I don't recall.

Q. Did you check the machine on the ground or check how it was retained, into the ball mill, how the ore was held in there?

A. This was a sort of a little circular screen, a trommel screen that I didn't check the exact machine. I mean just from general appearance it was about that size.

Q. And would not the mesh on that screen make a difference in the capacity of the mill?

A. Yes, it certainly would. There would be a factor there, that the rejects from that screen would have to be carried to the other end of the ball mill by manpower or by manual labor.

(Testimony of Edgar A. Scholz.)

Q. Isn't that so set that it can't come out of the ball mill until it is 10 mesh, isn't it so arranged until it goes through that 10 mesh?

A. No, course rock particles go out and go on the floor.

Q. Have you seen that mill in operation?

A. No, sir; I'd like to, though, some time.

Q. Isn't the rock that was on the floor rock that was cleaned out of the ball mill after it was stopped, when they stopped operations? [335]

A. Well, the way this screen is set up there, any particles getting out there could not go through, it would have to be disposed of in some fashion or another. It is not designed to go back into the mill that way.

Q. Now, you were testifying about the water use at Hillside. Your mine out there has water in it, hasn't it; don't you have to pump water out of your mine?      A. Yes.

Q. And the ore is wet there?

A. The ore is wet there on all of the lower levels, but we have upper stopes on the old 300 level which is bone dry.

Q. Now, how many tons of ore—when did you set up your mill there at Hillside?

A. I'd say it was set up before my arrival, considerably. I guess it was in condition to operate in the latter part of '47.

Q. And you weren't there at the time?

A. No, sir.

Q. And how much ore are you running through your mill now?

(Testimony of Edgar A. Scholz.)

A. At the present time we are operating on a two-shift basis, about—just about a hundred dry tons, or 95—90 to 100 dry tons. [336]

Q. Is that ore from the Hillside Mine?

A. Yes, sir.

Q. When did you start operating?

A. We have operated—the Hillside Mine was not rehabilitated sufficiently to supply the mill to full capacity, so that in the time that we weren't able to mill or have ore to mill from the Hillside Mine, we milled custom ore from the—mainly from the old Dick and Copper King Mines from the Goodwin Mining Company.

Q. Where are those mining properties, Mr. Scholz?

A. There are two mills there at Bagdad in the general direction of the Zannaras property. The Copper King is about a mile and a half airline south of Bagdad, about 11 or 10 miles from Bagdad by road.

Q. And how much custom milling do you do?

A. Approximately 8,000 tons.

Q. And when was that?

Mr. Wilmer: May it please the Court, I object to this line of questioning. It is not material.

The Court: I don't see that it would be in this case.

Mr. Cox: I expect to develop something [337] else.

The Court: Yes, I know, but I don't care for any more.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

ERNEST GEORGE GREEN

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. What is your name, please?

A. Ernest George Green.

Q. Where do you live?

A. Bagdad, Arizona.

Q. What is your business?

A. I work for the Bagdad Copper Company as mill superintendent and I am manager of the Goodwin Mining Company.

Q. Have you any other mining interests?

A. We are operating four mines in the Goodwin Mining Company and aside from that I have, oh, just a few claims, don't amount to much, nothing active.

Q. The Goodwin Mining Company is [338] operating four mining properties?

A. Yes, sir.

Q. And you manage them?

A. Yes, sir.

Q. And you are mill superintendent for Bagdad?

A. Yes, sir.

Q. How long have you been in the Mining business, George?

A. 15 years.

Q. And what has been your experience in that business; I mean what have you done?



(Testimony of Ernest George Green.)

A. I have been mill superintendent at Bagdad on that job four years. For a short time previous to becoming mill superintendent there I was in test work at Bagdad, and about three and a half—no, about five months through the summer of '44, I was not working for Bagdad, I was operating mining properties there that are in the neighborhood of the Goodwin Mining Company.

Q. That is the Pinafore?

A. Yes, the Pinafore, old Dick Mine, and the Copper Queen, and the years '42 and '43 and up to May 15, '44, I worked as assayer and chief chemist at Bagdad. Prior to coming to Bagdad, the first of '42, I worked one year, the year '41, as chief chemist for the Eagle Shawnee Mine in California. [339] In '30—In the years of '38, '39 and '40, I was operating the Rubicon Mining Company at Ruby, Arizona, my own mines. In '37, I was chief chemist of the 79 Lead-Copper Company at Hayden Junction, Arizona. In '34, '35 and '36, I was assayer and chemist for the Montana Mines at Ruby, Arizona. During the seven years I have been in Bagdad, I have always had some outside mines operating and managing, operating mines.

Q. During the time in 1944 that you were not working for Bagdad, you were operating the Pinafore and some of these other mines?

A. Yes, sir:

Q. Where are they with respect to Burro Creek?

A. The Pinafore Mine is seven miles from Burro Creek on the old Kingman Road.

(Testimony of Ernest George Green.)

Q. Did you have occasion in '44 to go to Burro Creek quite often below Kingman Crossing?

A. Yes, we went down, oh, we went down two or three times every week in the evenings to go fishing.

Q. That lies below Kingman Crossing and above the Zannaras property, is that right? A. Yes.

Q. During that entire summer did you fish in the water there? [340] A. Yes, sir.

Q. What did you catch? A. Catfish.

Q. Were the fish such that you ate them?

A. They were very good.

Q. And would you go swimming?

A. We—no, we didn't go swimming. The gnats are very bad out there in the hot weather.

Q. George, I believe you went with Mr. Dickey to the Zannaras property in July 27th, of this year?

A. Let's see, '48.

Q. I mean '48. A. Yes, sir.

Q. Were you there at the time that these several snapshots were taken by Mr. Dickey?

A. I was.

Q. And did you observe, George, whether or not the water on Burro Creek was running in Burro Creek at that point?

A. You mean at the mouth of Bonanza Wash?

Q. Yes. A. Yes, it was running.

Q. Do you recall to what extent?

A. Well, yes, there wasn't very much water there on the surface. I didn't go any distance, any great distance up or down the creek; in fact, [341] I didn't go up the creek at all. I just went down there when

(Testimony of Ernest George Green.)

Mr. Dickey took those pictures and there was a little water running in and out of Mr. Zannaras' sump.

Q. Did you go on down the creek any?

A. Oh, only 150 feet, just around this big pool.

Q. Did you form any estimate, George, as to the amount of water that was available there at that time?

A. Do you mean in the flow or in the pool?

Q. Well, I mean for practical mining—that a practical mining person would have to have available for use for his mill.

A. I noticed there was quite a volume of water there in the big pool and I made an effort to try to get a close estimate of what water there was there then, and my conclusion, I didn't measure the distance, I had to estimate the distance and the depth, my conclusion was there was about 90,000 gallons in that pool.

Q. With respect to making water available for mining, George, what is the customary procedure with respect to making provision for diversion and for a sump?

A. Well, a sump should, of course, be put [342] in in such a way that it would not constantly be filling up with sand and little rocks that the current carries along, and a sump should be of sufficient size so it will act as a sort of reservoir, and it depends on the amount you want to pump, of course, how big the sump should be. In any creek like that where a good part of the year there is a surface flow

(Testimony of Ernest George Green.)

and then an underground flow and it would flow through gravel and sand, the sump should be of pretty good size, so you would need quite a reservoir, depending on how much water you should need.

Q. Do you believe, in your opinion, George, it would have been difficult to put in a sump there to make that water available for use by the mill?

A. No, sir; not difficult.

Q. Have you had occasion during the summer of '48 to cross Kingman Crossing, George?

A. No, sir; I had not.

Q. Now, going on rapidly, George, with respect to the matter of use of water in mining, with respect to using it to wet ore, what does good mining practice require with respect to the quantity of water?

A. Used to wet ore? [343]

Q. Yes, dust.

A. Well, by far, in the majority of cases the ore does not require any wetting beyond the water that is discharged from the drilling machines. Of course, it is a part of the mining code and the State Law that we have to drill wet, we can't drill with dry machines either, and there is usually enough water there to dampen the dust. Ore naturally has a little moisture, and besides, the ore will probably analyze from one and one-half to two per cent moisture, which is not enough to keep the dust down, yet, when you add one or two per cent to that, the ore is noticeably wet and muddy.

Q. Is it a handicap in mining or milling if the ore is muddy and wet?



(Testimony of Ernest George Green.)

A. Yes, it is, through the main crushers, it is quite a handicap.

Q. Now, George, with respect to the amount of water you use in connection with the jackhammer, do you have any personal—I mean are you using water in connection with the operation of these various mines?

A. Yes, we do, and we, of course, have quite accurate measurements on the amount of water that we need to use in these machines, because these [344] small mines I have been operating there, we have to haul the water in there, and when we have to haul the water, we want to be pretty certain there isn't any going out to waste.

Q. How about in any one of those many mines, do you have any actual measurements as to the amount of water per ton of ore produced?

A. At the Pinafore Mine we produce 10 tons a day. Those 10 tons are broken through and we work one jackhammer to several machines, and we average 20 gallons of water.

Q. 20 gallons of water is all that is required?

A. Yes.

Q. Now, with respect, George, to the mill in question here, you looked at it, I believe?

A. Yes, sir.

Q. You looked at the setup to pump the water that was there?

A. Yes, sir.

Q. With respect to the arrangement of that sump and the entire setup, is it, in your opinion, a practical setup for operation in mining and milling tungsten ore?



(Testimony of Ernest George Green.)

Mr. Cox: I object, he has not qualified himself as a milling expert at all. [345]

Mr. Wilmer: You are the superintendent of the mill at Bagdad? A. Yes, sir.

Q. How many men do you have under you there?

A. I have about 40 in that mill.

Mr. Cox: A question on voir dire.

Q. Have you operated a small mill, Mr. Green?

A. Yes, sir.

Q. How many years?

A. I have operated around about a total of five years.

Q. Have you ever constructed a mill?

A. No, personally or alone.

Q. Have you ever designed a mill?

A. I have never designed one that has actually been put up.

Q. Do you have any knowledge of designing of a mill or what goes into a mill?

A. I operated mills that operated quite successfully and that operated at a profit. They operated continuously 24 hours a day. I have been paid pretty good salaries for that. While I didn't design them, I am quite familiar with them so that I know what it takes to make a mill operate.

Q. And you have had about five years' [346] experience with those mills? A. Yes, sir.

Q. And how many different mills in that five years? A. Three.

Q. And from your knowledge of just with those three mills operating you feel that you are qualified

(Testimony of Ernest George Green.)

to give an opinion on what other mills will or will not operate?      A. I do.

Mr. Wilmer: Will you read the last question I asked the witness?

(The question reading: "With respect to the arrangement of that sump and the entire setup, is it, in your opinion, a practical setup for the operation in mining and milling tungsten ore" was read by the reporter.)

A. Are you including the mill or the sump alone?

Q. (By Mr. Wilmer): Well, take them separate, the sump first and then the mill.

A. Of course, you have been referring to this as a sump, but it is really not very much of a sump. It is just really a little depression between a couple of boulders and it is not one per cent the size of the body of water immediately [347] adjacent to it, and I don't think that it is practical to set up a pump where you have no reservoir or no chance of water settling at all.

Q. All right. Now, with respect to the mill, what was your observation with respect to it?

A. I would not want the job——

Mr. Cox: We renew our objection on the mill, if the Court please, no qualifications shown to testify as to his opinion on the mill.

Mr. Wilmer: I don't think it is important. George, I am going to show you Defendant's A for identification, on which you were here and heard Mr. Jacobs testify with reference to. Did you cut the samples, George, that were sent to Mr. Jacobs?

(Testimony of Ernest George Green.)

A. I took the samples.

Q. Where were they taken from?

A. I took one sample in the bottom of the shaft which was around ore, broken loose ore that had been blasted along there. I took a sample across that shaft.

Q. Was it a representative sample?

A. Yes.

Q. How is that marked on there?

A. It is marked here as a sample, bottom of shaft. [348]

Q. All right.

A. I took a sample of the ore that was in the mill bin, the ore was put in there evidently and was ready for milling.

Q. That is at the mill and not at the mine?

A. It was at the mill.

Q. And how was that taken?

A. Well, that was taken just by going across from one corner to the other, just taking it like a little trench across there.

Q. All right.

A. And I took a sample from the concentrator.

Q. That is stuff that had been milled and concentrated?      A. Yes.

Q. What was the size approximately of the sample of the ore which you took in different instances?      A. About 10 pounds.

Q. And the amount of concentrates?

A. I'd say 6 pounds.

Q. Then what did you do with it?

(Testimony of Ernest George Green.)

A. I took it over to Bagdad and put it through the normal procedure for all samples. We had to dry it, and then in the next order crush it down to a very fine size and then cut it [349] down to a smaller size portion, and then pulverize it and mix it thoroughly.

Q. And that was mailed by you to the assayer at Tucson?      A. Yes, sir.

Mr. Wilmer: We offer Defendant's A for identification in evidence.

Mr. Cox: Voir dire. The assayer testified there was about a half cupful of each of those samples sent to him.

A. Yes, sir.

Q. Is that how much you sent them?

A. No, I just said I dried them, crushed the rock very fine and then cut the samples down to smaller sizes and then pulverized it and mixed it thoroughly. The samples that we sent to him was, oh, possibly six ounces out of six to ten pounds at the start.

Q. Did you check the sample at all yourself?

A. Did I?

Q. Did you check it at all?

A. Assay it?

Q. Yes.      A. No, I did not.

Q. Did you look at it at all?

A. I looked at it. [350]

Q. Did you look at it under a mineralite?

A. I don't remember for sure.

Q. You have a mineralite there, don't you?

(Testimony of Ernest George Green.)

A. Yes.

Q. You normally send to an assayer samples of a few ounces like that?

A. Yes, we do. That is the way I have been doing in every case, in every instance if I was sending a sample out. I would cut it down to a six ounce size. There are envelopes called mailing envelopes especially used for that purpose.

Q. In sampling did you measure that square across, or did you square it out?

A. It depends on how well the material mixes and how finely it is broken before you sample.

Q. But you didn't check this material over with a mineralite, did you?      A. No, sir.

Q. Where was Mr. Zannaras when you took these pictures?

A. These pictures that were taken July 22nd, of last year?

Q. Yes.

A. There was a lady at the cabin at the mine that said Mr. Zannaras was gone to town. That is [351] all I know about that.

Q. Did you ask her about running the pump to see how it would run?      A. No.

Q. They have always been co-operative there at the Zannaras property, have they?

A. Not according to hearsay around the neighborhood.

Q. Well, any time you have been there did you have any trouble?      A. No, I never had.



(Testimony of Ernest George Green.)

Q. Did you get wet that day; did you fall in or get yourself wet that day in taking those pictures?

A. No.

Q. Mr. Dickey testified that you were standing here in the stream.

A. Yes. I was not standing in the water. I was standing on a stone or something, because I don't remember getting my feet wet. I don't think I did.

Q. Where you were standing, that was the only stream of water flowing there, the stream of water across the bed of the creek at that point?

A. The water comes down through here. I think that is where the water was. [352]

Q. Where you were standing, though?

A. That was the diversion point.

Q. That is the only water that was across the bed right at that point?

A. Yes, but right across the water—

Q. You don't know how long it would have taken to pump out the natural sump that he had there?

A. No.

Q. From your observation of that would you say that—the testimony that the pump would run 45 minutes, run about 45 minutes and went dry, would be reasonable?

A. I don't think I would express an opinion on that, because I don't know enough about that pump; I have never run it; I have never seen it run.

Q. Well, assuming that it runs 40 gallons a minute.

A. Well, you can't hardly estimate that without

(Testimony of Ernest George Green.)

assuming something else. If the pump pumps 40 gallons a minute, it has to be put in a place where it would pick up water very well.

Q. Would that pick up all the water around there as you saw it in approximately 45 minutes or less? [353]

A. In the place where I was it would suck the pump dry.

Q. It would suck the pump dry?

A. Yes, it wouldn't get any more water.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Wilmer: There was an offer on Defendant's A for identification, and there was voir dire examination, and didn't renew the offer.

Mr. Cox: I don't recall Mr. Jacobs ever testifying as to the amount of return he found in the samples.

Mr. Wilmer: It shows right on the face of it what his return is. That is the assay he made and that is the return he made. I don't know how much more he can do.

Mr. Cox: My memory was it was not tied in with the exhibit.

The Court: Did he identify that?

Mr. Cox: He did identify the document.

The Court: That is where it came from?

Mr. Wilmer: I produced him and asked him if it was the assay he made, if the Court please.

The Court: It may be received.

(Thereupon the document was received [354]  
as Defendant's Exhibit A in evidence.)

C. H. W. SMITH

was called as a witness on behalf of the defendant,  
and being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. What is your name?

A. C. H. W. Smith.

Q. You are connected with the office of the Arizona Water Commissioner?

A. I am the engineer of the Water Division.

Q. Do you have in your custody the original records of the Water Commissioner's office with respect to the application of the Bagdad Copper Corporation to appropriate 315 million odd acres of water, filed in '41?

A. Gallons?

Q. Gallons per year. A. I have.

Q. Would you produce it, please?

(The witness produces a document and presents it to Mr. Wilmer.)

Q. (By Mr. Wilmer): Referring, Mr. Smith, to the Certificate of Water Right which I am taking out [355] of that folder, is that the original record of your office with respect to that particular water right?

A. Yes, sir.

(Testimony of C. H. W. Smith.)

Mr. Wilmer: Now, may it please the Court, I assume counsel is familiar with this.

Mr. Cox: Yes, I have a certified copy.

Mr. Wilmer: I have mine in the office, I forgot to bring it.

Mr. Cox: Don't you have one in this file?

Mr. Wilmer: No. If it is agreeable with counsel, since they are familiar with this and Mr. Smith would like to keep his records intact, if possible, I wonder if we might stipulate that a certified copy of this Certificate of Water Right may be substituted for this?

Mr. Cox: Yes.

Mr. Wilmer: At this time, if it please the Court, we offer in evidence from the records of the Land Commissioner of the State of Arizona, dated April 12th, 1944, Certificate of Water Right, Certificate No. 1314, Page 1314, subject to its materiality, Judge.

Mr. Lockwood: Yes. We want to make an objection for the record that it is immaterial, that it is dated after the appropriation—— [356]

Mr. Cox: Just for the purpose of the record, we wish to make an objection that the water right shown is immaterial, in that it is subsequent to the water right of the plaintiff.

Mr. Wilmer: The certificate, I believe, is for 315,360,000 gallons, and it is dated the 12th of April, 1944, is that correct?

Mr. Cox: That is correct.

(Testimony of C. H. W. Smith.)

Mr. Wilmer: Now, with that understanding, I offer that in evidence.

The Court: All right, it will be received subject to the objection.

(Thereupon the document was received and marked as Defendant's Exhibit L-1 in evidence.)

Mr. Wilmer: Will you serve me with a certified copy of that, Mr. Smith, and I will pay you for it?

The Witness: Yes.

Q. (By Mr. Wilmer): That was initiated by an application filed on what date, Mr. Smith?

A. November 5th, 1941, at 2:30 p.m.

Q. Now, do you have with you the file with respect to a water right issued to J. P. Zannaras?

A. I do.

Mr. Wilmer: Would you produce it, please?

(The witness complies.) [357]

Mr. Wilmer: Referring to this file, I at this time would like to have marked for identification the proof of appropriation of water which appears in the file as Application No. A-2362, Permit No. A-1539, Mohave County, filed in the office of the Water Division of the State Land Department on December 13th, 1944.

Mr. Cox: Is that the previous record to the certificate, Mr. Wilmer?

Mr. Wilmer: I am marking it for identification only at this time. It would not hurt it to put a stamp on that, would it?



(Testimony of C. H. W. Smith.)

The Witness: No.

Mr. Wilmer: And may we have the same stipulation, that subject to its materiality, of course, we will substitute a certified copy for this, and will you provide me with that, Mr. Smith?

A. Yes.

(Thereupon the document was marked as Defendant's Exhibit M for identification.)

Mr. Wilmer: That is all I have from Mr. Smith.

### Cross-Examination

By Mr. Cox:

Q. Mr. Smith, after the application for a permit by the Bagdad Corporation for an appropriation of [358] 315 million, some thousand, gallons of water, did the Bagdad Corporation furnish a certificate of proof of use of water?

Mr. Wilmer: I object to that on the ground it is immaterial, since proof of appropriation is a thing of legal matter.

Mr. Cox: This is not attacking the water right, but merely to show what the Bagdad Corporation said they did use.

Mr. Wilmer: Just a minute, what was the date of that?

Mr. Cox: I will ask you if, under date of March 15th, 1944, the Bagdad Corporation gave a notice of complete application of water to beneficial uses, showing 600,000,000—using 600,000,000 gallons of water per annum?

(Testimony of C. H. W. Smith.)

Mr. Wilmer: I object to that as being immaterial, since that was in '44. We are here concerned with '48.

Mr. Cox: Mr. Dickey testified there has been no material change in the amount of—

Mr. Wilmer: Mr. Dickey didn't testify to any such thing at all. They put in their tailing pond since then.

Mr. Cox: They had some pumps since then, but he said they had some pumps— [359]

Mr. Wilmer: I object on the ground it is immaterial what might appear in the proof of appropriation in 1944.

The Court: It may be received.

Mr. Cox: There was that record furnished to your office by the Bagdad Corporation, was there not?

A. Yes.

Mr. Cox: That is all.

Mr. Wilmer: That is all, Mr. Smith.

(The witness was excused.)

Mr. Wilmer: I call Mr. Zannaras for a couple of additional questions.

No. 15640

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United States  
Court of Appeals  
for the Ninth Circuit

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JOHN PHILLIP ZANNARAS, J. P. ROBIN-  
SON, JR., and U. S. TUNGSTEN CORPORA-  
TION,

Appellants,

vs.

BAGDAD COPPER CORPORATION, a Corpora-  
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Transcript of Record  
In Two Volumes

Volume II  
(Pages 327 to 661)

FILED

DEC 3 1957

PAUL P. O'BRIEN, CLERK

Appeal from the United States District Court for the  
District of Arizona



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JOHN PHILLIP ZANNARAS

was recalled as a witness, and having been theretofore duly sworn, testified as follows:

Cross-Examination

By Mr. Wilmer:

Q. Mr. Zannaras, as I recall, you testified in your direct examination that all of the 1944 water from Burro Creek was polluted to the extent you could not use it, is that right?

A. I wouldn't say that, most of '44.

Q. When did that pollution start? [360]

A. I don't remember.

Q. Did it start prior to '44?

A. I don't——

Q. You recall testifying in your previous trial as to when you say it was polluted?

A. No, I do not.

Q. Do you recall your deposition which was taken on July 2nd in Prescott in that case?

A. Yes.

Q. Pardon?

A. You refresh my memory. Now, that is seven years, now.

Q. You do not recall, I take it, at this time, when you say that pollution started? A. No.

Q. Well, as a matter of fact, in your complaint that was filed in that case—— A. Yes.

Q. You stated you had shut down in December, '43, because of the pollution of water?

A. Well, if I made complaint, I presume it is correct.

(Testimony of John Phillip Zannaras.)

Q. And then through the year '44 the water was polluted that entire year to where you could not use it, is that correct?

A. I can't remember the dates exactly. I [361] have to go back to the records and look up——

Q. Going back to your testimony yesterday, did you testify that the reason you didn't operate the mill in '44 was because the water was polluted?

A. Yes, that is right, '44, yes.

Q. Do you recall that your previous lawsuit was based on the fact that that pollution began in December, '43?

A. That is a question of record as to that complaint.

Q. I want to show you Defendant's M for identification, which is proof of appropriation of water. Did you prepare and sign and swear to that, Mr. Zannaras?      A. Yes.

Q. This was signed by you on the 12th day of December, '44, was it not? #

A. Yes, that is right.

Q. On the 12th of December, '44, for the purpose of obtaining this water right certificate referred to, you signed this affidavit?      A. Yes.

Q. "John Phillip Zannaras, being first duly sworn, depose and say that I have read the above and foregoing proof of appropriation of water; that I know the contents thereof, and that the [362] facts therein stated are true."      A. Yes.

Q. Now, one of the questions which was asked in this application, Mr. Zannaras, was the following:

(Testimony of John Phillip Zannaras.)

“State quantity of water that has been applied to use.” And you answered that: “Three million gallons per annum,” did you not?

A. That is right.

Q. “State date water was completely applied to use.”—“November 4th, 1944.”

A. Completely used it from the very beginning.

Q. During the 12 months preceding November 4th, 1944, you had been using that water, had you?

A. Yes.

Q. Despite the fact it was polluted?

A. I never used polluted water.

Q. Well, what is the difference, Mr. Zannaras, between—strike that. I am sorry. What did you use—where did you get the water out of Burro Creek that you used from November 4th, 1944, and the preceding year that amounted to three million gallons? A. I don't get the question.

Q. How do you justify the fact than on November 4th, 1944, you swore you used three [363] million gallons a year out of Burro Creek the previous year, made annual use of that amount?

A. Well, we used water from Burro Creek.

Q. I say in face of the fact you have heretofore testified under oath— A. Yes.

Q. —that you could not use the water from December, 1943, until—

A. I tell you it wasn't in '43.

Q. Just a minute. As I understand it, you have testified that beginning in December, '43, and on

(Testimony of John Phillip Zannaras.)

through '44, you had been unable to use this water because it was polluted, is that correct?

A. When it was polluted, at the time it was polluted I could not use it. At the time it was polluted, but it wasn't polluted all the time.

Q. Do I understand now it was not polluted all the——

A. Not all the time.

Q. It was available for you to have used it? .

A. Yes.

Q. Why didn't you use it?

A. When it was not polluted, I used it for mining purposes.

Q. Now, Mr. Zannaras, the mill that you speak of is how far from your mine? [364]

A. About 10 miles.

Q. The only source you have got to get water out of Burro Creek for mining purposes is at the mill?

A. Yes.

Q. Your camp and your residence during this time was at the mine?

A. No, both, your mine and mill.

Q. How much time do you stay at the mine?

A. At what time?

Q. During '42, '43 or '44?

A. It is a hard question to answer. I stay sometimes at the mine, I stay sometimes at the mill.

Q. How long does it take you to make a round trip between the mine and the mill?

A. About an hour and a half.

Q. That is 12 miles?



(Testimony of John Phillip Zannaras.)

A. No, about 10 miles, take about an hour and a half.

Q. And what facilities do you have for hauling water from the mill to the mine?

A. Oh, I had a truck and a big tank truck.

Q. What kind of a tank do you have?

A. 6,000 gallon tank.

Q. 6,000 gallon tank, and you would haul a thousand gallons of water every day from the [365] mill to the mine?

A. Any time we need it, yes.

Q. How did you get the 3,000 gallons of water which you used in the house out of the tank and to the house?

A. Well, we filled drums.

Q. How many drums would you fill to get 3,000 gallons a day down to the house?

A. Well, we fill the tank, too; we carry water with the tank, too, for the house.

Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Wilmer: Mark that for identification, please.

(Thereupon, the document was marked as Defendant's Exhibit N for identification.)

Mr. Wilmer: Mark this for identification.

(Thereupon, the document was marked Defendant's Exhibit O for identification.)

Mr. Wilmer: We offer at this time in evidence Defendant's Exhibit M for identification, being

proof of appropriation of water, particularly the portions comprising the answers to questions 5, 7 and 8.

Mr. Cox: What is the purpose?

Mr. Wilmer: The purpose is self-evident. [366]

Mr. Cox: It is simply on the credibility of the witness?

Mr. Wilmer: The purpose is self-evident. It is offered for all purposes for which it is material.

The Court: Well, object to it and I will admit it subject to your objection.

Mr. Lockwood: The same objection that was made before.

Mr. Wilmer: I wonder if I may release this to Mr. Smith with the understanding we will put a certified copy of it in the record?

Mr. Cox: Is there anything else to come from the Water Department?

Mr. Wilmer: There is a certified copy of the other certificate.

Mr. Cox: Which other certificate?

Mr. Wilmer: The one I have already offered and which has been admitted.

Mr. Cox: That is perfectly all right. You have any new certificate?

Mr. Wilmer: I have something new right now.

Mr. Cox: We would rather Mr. Smith not be released.

Mr. Wilmer: I am not releasing him. We offer that—we offer Defendant's Exhibit N for [367] identification in evidence.

Mr. Cox: You are offering N?

Mr. Wilmer: No, for identification in evidence.

Mr. Cox: We object to N for identification, upon the ground that it is merely an application for a permit, the application being dated January 9th, 1939, and a permit dated May 5th, 1939, for the construction of the diversion and appropriation of water in a manner that there is no showing that has ever been used, and under the law of the State of Arizona, unless there is a showing that that has been extended or had been completed, that the permit has expired and would have no materiality at all at this time, there being a five-year period stated on the instrument itself to be completed on or before May 5th, 1942, and this alone would be immaterial, in that if it has been completed and there has been a certificate of water right issued, that that would be proper evidence of any rights under the application that is shown on Exhibit N for identification. By the way, has this been identified in any way by any witness?

The Court: Identified——

Mr. Cox: Oh, it has just been offered.

The Court: I don't know where it came [368] from.

Mr. Wilmer: There is the signature and the seal of the State Water Commissioner, your Honor, on the permit.

Mr. Cox: May I recall Mr. Smith on voir dire?

Mr. Wilmer: Surely.

C. W. H. SMITH

was recalled and testified further as follows:

Recross-Examination

By Mr. Cox:

Q. Mr. Smith, would you refer to your file No. A-1251? A. Is that the application number?

Q. Yes, that is the application number—A-2078, I beg your pardon. In that, I show you here Defendant's Exhibit N for identification, which is, it purports to be, I am sure it is, a certified copy of the application in that file? A. Yes, sir.

Q. Has there ever been a water right issued on that application? A. No.

Mr. Wilmer: Just a minute. I will not object to the question if there has been a water right certificate, because there has not been one and [369] we don't claim there has been. It is our position that a permit for the appropriation is all that is required. If we see fit to go there and get ourselves a fancy certificate, we can do so and there is no requirement in the Statute, and the fact is we have been using the water for years.

The Court: I will admit it subject to your objection. I never heard of such a thing; you never did either.

Q. (By Mr. Cox): I'd like to know if, in this file, did the Water Department at any time send to the Bagdad Corporation forms for filing notice of completion in order to obtain a certificate of water right under that application?

A. Yes. On May 9th, 1942, a letter was sent to

(Testimony of C. W. H. Smith.)

Mr. Still, the General Manager, by Jesse Wanslee, State Water Commissioner at that time, enclosing forms of the notice of completion, and those forms were not submitted in this case.

Q. In that letter were they notified as to when the work was to be completed?

Mr. Wilmer: Just a minute, may it please the Court, the letter is the best evidence.

Mr. Cox: Just read the letter.

The Court: Read that into the record. [370]

A. A letter to Mr. J. W. Still, General Manager, Bagdad Copper Corporation, Hillside, Arizona. From Jesse C. Wanslee—by Jesse C. Wanslee, State Water Commissioner, dated May 9th, 1942, in regard to Application No. A-2078, Burro Creek Bagdad Corporation.

“Dear Sir: We enclose herewith forms for notice for completion and construction which are to be filled out in the above designated case. According to the terms of the permit, construction work was to have been completed on or before May 5th, 1942. Sincerely yours.”

Mr. Cox: Was there ever a reply to that giving notice of completion?

A. Not in this case, no.

Q. Was there ever an extension granted of time for the completion of the work?

A. I don't see any.

Mr. Cox: There is none in there. There isn't any argument on that. All right.



(Testimony of C. W. H. Smith.)

### Redirect Examination

By Mr. Wilmer:

Q. How long have you been with the Water Commissioner?

A. Since January 2nd, 1945. [371]

Q. So that all you are testifying to is from the records? A. That is right.

Q. I notice on the outside of this file, Mr. Smith, that there is a notation, that notice of complete application of water was made on May 5th, 1945, filed. That does not appear in the file. Do you know what happened to that?

A. No, I do not. I didn't notice that particular notation.

Q. Notice of complete application of water has been——

A. Oh, that is a ticker for the form to be sent to the applicant.

Q. Now, Mr. Smith—I don't like to mess this thing up, your Honor, but in view of counsel's position, I believe this file should be available for this reason: It shows that the matter was quite warmly contested. There was a protest by the Burro Creek Land & Cattle Company, and I believe by—no, by the Burro Creek Land & Cattle Company is the only one that apparently appears here. There is an order denying the protest which shows the Commissioner's investigation of the matter. It shows that the application was not one which was idly made. It shows that on August [372] 7th, 1941,

(Testimony of C. W. H. Smith.)

Howard J. Smith, on behalf of the Bagdad Copper Corporation, wrote the Honorable J. C. Wanslee, Water Department, Phoenix, Arizona, as follows:

“Dear Sir—” I will save putting the whole thing in the record, if I may read it.

Mr. Cox: Read it into the record subject to our making later objection.

Mr. Wilmer: “Dear Sir: For and on behalf of the Bagdad Corporation, we hand you herewith copy of permit for rights of ways for poles and lines concerning the crossing of public lands which relates to and will be used in connection with the water rights issued by the Department, No. A-2078, which we judge you may desire to file in connection therewith. Sincerely yours, Howard J. Smith.”

In that connection there is filed an agreement between the Bagdad Copper Corporation, as permittee, in connection with this right—application for right to occupy and use certain rights of ways across public lands to the point of diversion, which was in '41.

Mr. Cox: Mr. Wilmer, if you are going to ask that that file be read in, then we have to go to the 1905 file, which I will avow shows that the [373] letter you have just read, together with everything subsequent to that, except for a letter of transmittal of a certified copy, and the payment for it, was because of an error in filing that Smith letter, and that the Bagdad requested a certified copy of their permit, and they were sent by the Water Department without permit A-2078, because there was no

(Testimony of C. W. H. Smith.)

opportunity of hearing, and after they got it and paid for it, they wrote back, as shown by the other file, and said they didn't want this at all, we need it for operation. It is on the file that you have introduced in evidence your water right on.

Mr. Wilmer: All I am trying to do is, to show that this water right was obtained in good faith in 1939, that there was activity on it and that we have diverted and have appropriated water out of Burro Creek.

Mr. Cox: You can't do that with that file.

Mr. Wilmer: I can do it with the permit. There is no magic in this certificate. The magic is to put the water where you can do the most good.

The Court: Oh, let's get through with this lawsuit.

Mr. Wilmer: I am offering in evidence Defendant's O for identification. [374]

Mr. Cox: May I ask the purpose of Defendant's O, Mr. Wilmer?

Mr. Wilmer: Yes.

Mr. Cox: Is it your contention this is also in existence? May I ask a question on voir dire of the witness?

Q. Will you see the letter dated October 11th, 1943, signed by J. W. Still, General Manager of the Bagdad——

Mr. Wilmer: I will withdraw this last application. I don't think it has any merit.

The Court: All right.

Mr. Wilmer: This last one, I don't know what is

in the letter, but I doubt if it has any probative value. The record may show that with counsel's acquiescence we will withdraw Defendant's O for identification.

The Court: All right.

Mr. Wilmer: That is all, Mr. Smith.

(Thereupon, the witness was excused.)

Mr. Wilmer: The defendant rests.

(Thereupon, a document was marked as Defendant's Exhibit N in evidence.)

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DEFENDANT'S EXHIBIT N

Application No. A-2078

Permit No. A-1251

Permit

To Appropriate Public Waters of  
the State of Arizona

District No. ....

This instrument was first received in the office of the State Water Commissioner at Phoenix, Arizona, on the 9th day of January, 1938, at 1:30 o'clock p.m.

Returned to applicant for correction, January 23, 1939.

Corrected application refiled, January 28, 1939.

Approved, May 5, 1939.

Recorded in Book No. 12 of Applications for Permit at page 2078.

/s/ JESSE C. WANSLEE,  
State Water Commissioner.

## Defendant's Exhibit N—(Continued)

## Application for a Permit

To Appropriate Public Waters of the State of Arizona

Filed January 9, 1939, at 1:30 p.m.

I, Bagdad Copper Corporation, Hillside, Arizona, by J. W. Still, Gen'l. Mgr., of Hillside, County of Yavapai, State of Arizona, do hereby make application for a permit to appropriate the following described unappropriated waters of the State of Arizona.

1. The source of the proposed appropriation is Burro Creek, tributary of Big Sandy River.

2. The amount of water which the applicant intends to apply to beneficial use is:

For mining use, 105,120,000 gal. per year.

3. The point of diversion is located 445 feet South 28 degrees, 30 minutes East from the NW corner of Sec. 27; being within the NW $\frac{1}{4}$  of the NW $\frac{1}{4}$ , of Sec. 27, T. 15 N, R. 10 W, G. & S. R. B. & M., in the County of Yavapai.

4. The water will be used for Copper Ore Milling in the NW $\frac{1}{4}$  of the SE $\frac{1}{4}$ , of Sec. 4 and for ..... in the ..... of Sec. ...., T. 14 N, R. 9 W, G. & S. R. B. & M., Yavapai County, Arizona.

## Description of Works

5. Diversion Works: (a) Diversion will be by gravity, the diverting dam to be 4 feet in height (stream bed to overflow), 125 ft. long on top, and constructed of timber & brush.

(b) Description of headgate: Timber—one opening, 1 ft. x 3 ft.

(c) If water is to be pumped give general description: Triplex pump, driven by 80 HP Diesel engine to lift water 1025 ft. thru 7.27 miles pipe line.



Defendant's Exhibit N—(Continued)

6. (b) Pipe line: Diameter 6" & 8"; length 38,385 feet; grade 25.3 feet per 1,000 feet; total rise from intake to outlet, 1,025 feet; kind, steel.

7. Distributing Works. 1 tank; Material steel, 60 ft. dia. x 10 ft., 211,500 gals. capacity.

8. Cost and Construction Schedule. The estimated cost of the proposed project is \$31,000. It is proposed to begin construction within one year after the approval of this application, to complete construction within two years thereafter and to completely apply the water to the proposed use five years after the beginning of construction.

Description of Proposed Use

\* \* \*

14. Mining Use. The mines to be served are copper, known as the Bagdad; located in ....., Secs. 3, 4, 5, T. 14 N, R. 9 W; 32, 33, 34, T. 15 N, R. 9 W, G. & S. R. B. & M. and owned by The Bagdad Copper Corporation.

The method of utilizing the water is in a copper flotation mill.

Will the water be polluted by chemicals or otherwise? No.

What disposition is made of water after use? To Marooney Creek in SW $\frac{1}{4}$  of SE $\frac{1}{4}$ , T. 14 N, R. 9 W.

General

15. Are the maps required by the Rules and Regulations filed with Application? Yes.

16. The proposed point of diversion is on land of Public Domain.

17. The proposed conduit system is on land of Public Domain & State Land.

18. The land at the proposed place of use is owned by Bagdad Copper Corp.

19. Post office used by those living near the proposed point of diversion is Hillside & Wickiup.

## Defendant's Exhibit N—(Continued)

20. Of the applicant's knowledge, has the water described herein ever been appropriated, claimed or used by others? Yes. If so, file a statement herewith furnishing names of former appropriators or users of the water, and supporting applicant's claim that the water is now subject to appropriation.

21. If the source of supply is a stream, state names and addresses of three water users from the stream below the proposed point of diversion; or, if there are no water users from stream below the proposed point of diversion, or if the source of supply is other than a stream, furnish the names and addresses of at least three residents of the vicinity familiar with the source of supply and the proposed use of water.

Answer to 20, above: The old Neal Ranch, about 2 miles below the proposed point of diversion has used water from Burro Creek for irrigation purposes on a small amount of cultivated land. This water is but a small part of that flowing, even in the dry season. The minimum flow is approximately 1,000 gpm and the Neal Ranch use will not exceed 75 gpm. For the above reason we believe that there is now in excess of 200 gpm subject to appropriation.

Land owners below proposed point of diversion:

Burro Creek Cattle Co., owner H. Cline, Hillside, Arizona (Neal Ranch).

G. C. Shellabarger, c/o G. Spurlock, Wickiup, Arizona.

BAGDAD COPPER CORPORATION,  
Hillside, Arizona,

By /s/ J. W. STILL,  
Gen. Mgr.  
Signature of Applicant.

## Order of Correction

State of Arizona,  
County of Maricopa—ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and returned the same for correction or completion, as follows:

Defendant's Exhibit N—(Continued)

In Par. 2, strike "0.445 cu. ft. sec. or." In Par. 3, strike out tie and insert tie to new point of diversion and correct description of 40 acre tract in which located. In Pars. 5(c) and 6(b), correct length of pipe line. In Par. 7, correct capacity of tank. Correct original map or prepare a new map.

In order to retain its priority, this application must be corrected, completed and refiled in the office of the State Water Commissioner on or before March 24th, 1939.

Witness my hand and seal of office this 23rd day of January, 1939.

[Seal]      /s/ JESSE C. WANSLEE,  
State Water Commissioner.

Application No. A-2078

Permit No. A-1251

Permit

State of Arizona,  
County of Maricopa—ss.

This is to certify that I have examined the foregoing application and do hereby approve the same, and grant to the applicant a permit to appropriate the water described therein subject to the following limitations and conditions:

The amount of water appropriated shall be limited to the amount which can be applied to beneficial use and shall not exceed One Hundred Million (100,000,000) Gallons per annum for Mining Use. (This Permit shall in no wise conflict with the vested right of the Burro Creek Cattle Company.)

The priority of date under this permit is January 9, 1939.

Actual construction work shall begin on or before May 5, 1940, and shall be prosecuted with reasonable diligence and be completed on or before May 5, 1942.

Complete application of the water to the proposed use shall be made on or before May 5, 1945.

Witness my hand and seal of office this 5th day of May, 1939.

[Seal]      /s/ JESSE C. WANSLEE,  
State Water Commissioner.

Admitted and filed March 4, 1949.

The Court: Do you have any rebuttal?

Mr. Cox: Yes. [375]

## PLAINTIFF'S REBUTTAL TESTIMONY

### ARTHUR J. SEEDS

was recalled as a witness on behalf of the plaintiff in rebuttal, and testified further as follows:

#### Direct Examination

By Mr. Cox:

Q. I believe you testified you were somewhat familiar with Burro Creek, Mr. Seeds?

A. Yes.

Q. You were previously sworn here yesterday?

A. Yes.

Q. Do you know the source of Burro Creek?

A. Approximately.

Q. Have you been through that country?

A. No, not right through the district.

Q. Not through the district? A. No.

Q. How far up Burro Creek have you been?

A. I have not been up any further than the ranch where this water is, where this intake is now. It wasn't there when I was out there long ago.

Q. Had you previously—have you seen Mr. Zannaras' dam there, I mean at least where he is [376] diverting his water, at any other time, have you seen it up there?

The Court: That would be improper rebuttal.

Mr. Wilmer: Just a minute, I object——

The Court: Go ahead.

(Testimony of Arthur J. Seeds.)

Mr. Cox: You had been to that diversion point of Mr. Zannaras' at other times other than on the 17th?

A. Yes.

Q. And had he, under the ordinary conditions there, could he or couldn't he pump water out of the diversion dam that he had?

A. He did it. Before, there was plenty of water there the time I seen it.

Q. And at this time there was not?

A. No.

Q. I show you Defendant's Exhibit D in evidence and ask you if that is about the way his diversion point looked, is that the way it looked when you were there?

A. Yes, I imagine that I would take it to be that.

Q. Down below his diversion point, I show you Defendant's Exhibit E, pictures. Mr. Dickey testified the pools down below. Did you notice the water down below? [377]

A. Yes, there is pools down there.

Q. And how large are those pools, Mr. Seeds?

A. Well, I don't know. I'd have to guess on that because I never measured them, but I should say that that pool, the last time I seen it, it was probably 20 by 40, or something like that, in size; the depth of it, I wouldn't know, I wouldn't know if it was an inch deep or a foot. I never measured it.

Q. Could you see the bottom very clearly there?



(Testimony of Arthur J. Seeds.)

A. Oh, in parts of it you could see the bottom very clearly.

Q. You testified you had not been to the Bagdad diversion?      A. No, I have not.

Q. And on October 17th, there was not sufficient water to operate the pump?      A. No, no.

Mr. Cox: That is all.

Mr. Wilmer: No questions.

The Court: That is all, Mr. Seeds.

(The witness was excused.)

Mr. Cox: We rest.

Mr. Wilmer: That is all.

The Court: Do you want to argue this case Monday afternoon? I can give you about an [378] hour if you want, about 2:30.

Mr. Wilmer: That will be fine.

The Court: The Court will stand at recess.

(Thereupon, the trial ended at 4:55 o'clock, p.m. of the same day.)

[Endorsed]: Filed June 12, 1950.

In the United States District Court,  
District of Arizona

Civil No. 221

JOHN PHILLIP ZANNARAS, J. P. ROBIN-  
SON, JR., and U. S. TUNGSTEN CORPORA-  
TION,

Plaintiffs,

vs.

BAGDAD COPPER CORPORATION,

Defendant.

Proceedings had and evidence taken in the above-entitled cause before the Honorable Dave W. Ling, Judge of said Court, in his courtroom in the United States Courthouse, Phoenix, Arizona, commencing on the 9th day of March, 1954, at ten o'clock a.m.

Present:

MR. JOSEPH H. MORGAN,  
Appeared for the Plaintiffs.

MESSRS. SNELL & WILMER, By  
MR. MARK WILMER,  
Appeared for the Defendant.

Proceedings

The Clerk: Civil 221 Prescott. John Phillip Zannaras, et al., versus Bagdad Copper Corporation, for further hearing on the plaintiffs' petition for relief.

The Court: Are you ready? Call your first witness.

Mr. Morgan: I might make a statement, if the Court please, before we begin with the evidence.

The Court: All right.

Mr. Morgan: If the Court will remember, at the close of that other case, the matter was continued for further hearing, in order that a judgment could be entered, as we understood it, which would protect plaintiffs' prior water rights, with as little loss of water as possible.

I think that is what the court wishes to be advised of.

We have assumed, of course, that the defendant would submit the proof, since under the settled law, the prior appropriation is entitled to the water in its natural flow, that is, down the stream, unless they can show a more advantageous way of delivering the water without waste.

There are two decisions of the Supreme Court of Arizona that govern that case. The first [2\*] is the Arizona Copper Company versus Gillespie decision, which was approved by the Supreme Court of the United States, 100 Pacific 465, 12 Arizona 190; and affirmed by the Supreme Court in 230 U. S. 46.

It was there held that he who is first in time is first in right. Subsequent appropriators cannot deprive him of the rights his appropriation gives, either by diminishing the quantity or deteriorating the quality.

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\*Page numbering appearing at top of page of original Reporter's Transcript of Record.

Since that decision was entered, the Supreme Court of Arizona in the famous case of Pima Farms versus Proctor, 30 Arizona 96, 245 Pacific 369, laid down the same rule, but provided that in that case if the defendant, that is, the second appropriator, could let down the water in some other way rather than down the stream, he had a right to do it.

And I am going to, with the permission of the Court, quote very briefly from that case.

“An appropriator of water from a running stream is entitled to have it flow down the ‘natural channel’ to his point of diversion undiminished in quantity or quality, or, if diverted from natural channel by other appropriators for their convenience, to have it delivered to him at available [3] points by other means provided by subsequent appropriators at their expense; ‘natural channel’ being floor or bed on which water flows and banks on each side thereof as carved out by natural causes.

“Senior appropriator by means of wells and pumps from independent underground stream is entitled, as against subsequent appropriator, to have such stream level remain so that his means of capture and diversion as originally installed will not be impaired or destroyed for his uses, or in lieu thereof to have later appropriator deliver him his water in such a manner as to make it available for his use.”

And it was held in that case that the later appropriator could, in lieu of letting the water down underground, let it down to the senior appropriator in a ditch or canal.

Now, as I see it, the only question that will be before the court is how this water can be let down by the Bagdad Corporation with as little expense, of course, and as little loss as possible.

Mr. Wilmer: I take it it might be advisable, if it please the court, if we briefly outline our position. [4]

I think that it might perhaps facilitate the handling of the matter.

We rely, if it please the court, on the case of Albion Idaho Land Company versus the NAF Irrigation Company, 97 Federal Second at page 439, which is a case almost, with minor deviations which are not material, we believe, squarely in point with the facts as we will develop them.

I would like, if I might, to read just from the head notes to avoid taking a lot of the court's time.

First of all, it recognized that it is contrary to public policy of both Idaho and Utah to permit waste of water. Which is of course true in this jurisdiction.

Then the court goes on to hold, and I think it possibly is worth noting, that strangers to a proceeding to establish a water right are not bound by it. In other words, in this particular case there was an adjudication with respect to water rights in the stream, to which these parties were not parties, and the court, citing numerous cases, held that the same principle applies to decrees rendered to adjudicate rights in using water not being strictly in rem. That is just in passing. [5]

"While ordinarily a prior appropriator has a



paramount right to divert water from his stream and a junior appropriator may not divert water unless waters flowing in the stream are in excess of amount which prior appropriator has a right to divert, if, due to physical conditions beyond control of appropriators, water flowing in stream will not reach diversion point of prior appropriator in sufficient quantity for him to apply it to beneficial use, then junior appropriator whose diversion point is higher on the stream may divert the water."

And, secondly,

"Where, due to seepage, evaporation, and channel absorption, water flowing in interstate nonnavigable stream having its source in Utah and flowing into Idaho, when the average flow was below minimums fixed by the decree, would not reach users in lower lands in sufficient quantities to afford a practical head for irrigation, the trial court properly awarded waters for use of upper lands during times the flow at the gauging station was below such minimums, [6] even if the rights of users in upper lands were junior in right to those in lower lands."

In this particular case, if it please the court, it appeared that, as in this area, there were seasons of the year when the water, due to natural conditions, would not, without at least great waste, reach the prior appropriator, who was lower.

In this particular case, the court recognized the rights of the prior appropriator, but said, You are to use your water during these seasons when you can use it.

In other words, specify when the water was to be

used by one, and when it was to be used by the other.

In that connection, I want to briefly call your Honor's attention to this: If we assume that Mr. Zannaras has a valid water right, which, for the purpose of this proceeding, we must, his water right is for 3 million gallons per year.

He testified that his mill had a capacity of 50 tons per day. It was testified on several occasions by Mr. Dickie, and I believe others, that the normal use of water, the normal duty of water with respect to this type of milling operation, is three to one. In other words, three tons of water to one ton of ore which is milled. [7]

If we take Mr. Zannaras' own figures, if it please the court, and assume instead of 50 tons a day, the capacity was 20 tons a day, and if we assume that he mills only three hundred days out of the year instead of 365, we still find that to run for those 300 days he must use 1,140,000 gallons more than his water right.

In other words, based on his own statement as to the capacity of the mill, and cutting that not in half, but down to 20 tons per day, and accepting the fact he is entitled to his water, still, for the full use of his water he is only entitled to run substantially less than 300 days in the year.

I didn't figure out what that would actually come down to, but I assume it would probably be in the neighborhood of 250 days out of the year.

The gauging records which were introduced in

evidence, and the other records all indicate that there was only a couple of months in the year when there is a water shortage.

We, therefore, believe that under those circumstances, rather than Mr. Zannaras electing to mill when there is no water, as he testified on numerous occasions, he never got ready to mill [8] until June, when there was not any water. That is our position.

Now, if I may briefly outline what we propose to show in this connection.

Now, we have had a series of very careful geological examinations made of the stream bed below the Bagdad sump down to Mr. Zannaras' point of diversion. We have surveyed it to where we can accurately tell the court exactly what the basin is.

We have had geophysical soundings made to determine the depths of the bed, and the type of the material. We will show the court, if it please the court, without question, we believe, and your Honor will recall that there was right above our point of diversion bedrock, where the stream comes out of the bedrock. Immediately below our point of diversion, and almost to the Kingman Crossing there lies an old channel, an old basin, which comprises approximately 13 hundred acres, 1374 some acres of river bottom. This lies in an old channel, which, instead of following the course of the Burro Creek past the Kingman Crossing, is running generally southwest.

Below the Kingman Crossing into Mr. Zannaras' point of diversion it is substantially [9] bedrock,

with approximately six to thirty-seven feet of gravels, and containing approximately 83 acres, so that we have a total evaporative area lying below our point of diversion and Mr. Zannaras' mill of approximately 82 acres.

We will show you by computations that the amount of water which Bagdad takes, during the season of the year when there is a high evaporation, and the discharge of this stream into the old channel and through the type of vegetation that fills it, is inconsequential.

In other words, if we pumped not at all from the time the shortage begins, it might increase the flow for three or four days, or a week, to Mr. Zannaras' point of diversion. Beyond that, the excess of water loss through evaporation is so high that our adding of five or six or seven hundred gallons per minute to the stream flow would simply mean that much more water to be drawn off into the air.

Therefore, based on the rule laid down in this Tenth Circuit case, which we believe is not only good law, but good economics, we believe we can show the Court that our use of water during this period couldn't possibly, other than the wet years, and then it wouldn't make any difference, operate [10] to give Mr. Zannaras any substantial increase in his use.

I will call Mr. Colville.



GEORGE W. COLVILLE

called as a witness for the defendant, having been first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. Will you state your name, please?

A. George W. Colville.

Q. What is your occupation?

A. Chief Engineer for Bagdad Copper Corporation.

Q. What profession do you follow?

A. I follow the profession of engineer, and I am registered in the state.

Q. You are a registered civil engineer?

A. Yes, sir.

Q. In that connection, Mr. Colville, are you accustomed to doing a lot of surveying?

A. I am.

Q. In accordance with our request, did you make some surveys in connection with the Burro Creek area lying below the Bagdad sump and to Mr. Zannaras' mill? [11]

A. Yes, sir.

Q. In that connection, Mr. Colville, I believe you were supplied with a legal description of the Zannaras point of diversion, as set forth in this application for a permit to appropriate water?

A. I saw it.

Q. Did you survey out that location?

A. I surveyed out the actual point of diversion.

Q. Did you survey out the point that he listed as his point of diversion?



(Testimony of George W. Colville.)

A. I plotted it from the original point as given.

Q. Now, is that a loose end survey, or did you tie it in?      A. It is tied in.

Q. Do you have a map, Mr. Colville, which you prepared, which shows the result of your survey?

A. I do here.

Q. May I see that?

A. Yes. (Handing to counsel.)

Mr. Wilmer: I suppose we should go on, should we not, on our numbers, your Honor, or should we start over?

The Court: However the clerk wants to do it. It is immaterial. [12]

The Clerk: Defendant's Exhibit M for identification.

(Said document was marked as Defendant's Exhibit M for identification.)

Q. (By Mr. Wilmer): I will hand you Defendant's Exhibit M for identification, Mr. Colville, and will you please examine that and tell me with respect to that exhibit if it was prepared under your direction, and if it accurately represents a survey of Burro Creek, and also of the point of diversion which Mr. Zannaras has acquired?

A. It is. That is a map made from field surveys and notes under my direction, and by me.

Q. Now, this line up here, which indicates Burro Creek, is that the true present channel for Burro Creek?      A. It is.

Q. This line which extends down to this par-

(Testimony of George W. Colville.)

ticular point where you have the red arrows at the bottom, what does that represent?

A. This red line is the location of the diversion point as set forth in Mr. Zannaras' water right.

Q. That represents the point he has applied for to appropriate water from Burro Creek? [13]

A. As I remember reading it, yes.

Q. How far is that from the creek itself?

A. It is about two miles.

Q. So the point of diversion which Mr. Zannaras has in his application and in his water certificate is not on the creek itself?

A. Not according to the surveys.

Q. Is the survey accurate? A. It is.

Q. Before I offer this—Mr. Colville, did you have an aerial survey of the U. S. G. S. of the Burro Creek area, or a portion of it?

A. We did.

Q. You have that with you?

A. I have it here.

Mr. Wilmer: May this be marked?

The Clerk: Defendant's Exhibit N for identification.

(Said document was marked Defendant's Exhibit N for identification.)

Q. (By Mr. Wilmer): I am going to hand you Defendant's Exhibit N for identification, Mr. Colville, and ask you if that is a map which you obtained, or which was obtained for you from the U. S. Geological Survey, showing an aerial survey

(Testimony of George W. Colville.)

of the Burro Creek below [14] the Bagdad point of diversion?

A. Yes, sir. It goes as far as the aerial photo shows, and the balance is made from field surveys and plotted thereon.

Q. At the top of the map where you have Pump Station, Bagdad Copper Corp., will you state what that is, please?

A. That is where our point of diversion is, that we were pumping out of the creek.

Q. And at the bottom, "A," Zannaras Pump Station, will you state what that is, please?

A. That is his point of diversion.

Q. Through actual field surveys, did you determine if this aerial survey was correct, with respect to the boundary line of Burro Creek?

A. Yes. It is.

Q. So that by actual surveys you have confirmed the fact that the general borders of the creek from our point of diversion down to the Zannaras point of diversion are as outlined in yellow in this map?

A. Down to the Zannaras point of diversion.

Q. Where the aerial survey stops, did you actually survey the creek bed on down to Mr. Zannaras' place?

A. Yes. Those were made by actual field [15] measurements made on this map.

Q. You have your field notes? A. I do.

Q. So I understand it, this snake-like thing from Zannaras' point of diversion, to what you have labelled Valley Floor—82.5 acres, represents an

(Testimony of George W. Colville.)

actual survey of the bed of Burro Creek from approximately the Kingman Crossing down to Mr. Zannaras' place?      A. Yes.

Q. And from that point to the Bagdad point of diversion represents an actual survey of the bed of Burro Creek to our point of diversion above?

A. Yes, sir.

Q. And this Exhibit M for identification shows the actual survey of the center of Burro Creek, from which you took your measurements——

A. This survey of the Burro Creek from the Kingman Crossing down to the Zannaras point of diversion is the same as on the other map, made from the same notes.

Mr. Wilmer: We offer Defendant's Exhibit M for identification in evidence.

Mr. Morgan: No objection.

The Clerk: Defendant's Exhibit M in evidence.

(Said document was received in evidence and marked Defendant's Exhibit M.) [16]

Mr. Morgan: May I ask a couple of questions on voir dire?

Mr. Wilmer: Surely.

Q. (By Mr. Morgan): Mr. Colville, all these surveys you made were on unsurveyed land, were they not?

A. The survey made down to the point of diversion was taken in the central portion on surveyed land. But it is unsurveyed land.

Q. The actual plat covers only unsurveyed lands?

(Testimony of George W. Colville.)

A. No; part of it is on surveyed lands.

Q. Where is the surveyed land?

A. They are on there in faint lines. You will see section corners there.

Q. At the upper end?

A. Would it be all right if I pointed out?

Q. Yes.

A. From this point here, the Burro Creek, this section corner is surveyed lands in this direction (indicating).

Q. That is to the east?

A. To the east. To the west unsurveyed lands. The east corners here that are shown are unsurveyed lands.

Q. Then everything above the crossing is on [17] surveyed land?      A. Yes, sir.

Mr. Morgan: All right.

Q. (By Mr. Wilmer): To get the record straight on this, everything to the east is unsurveyed land (indicating)?      A. Unsurveyed.

Q. Looking at this exhibit, Mr. Colville, at the point where the yellow, the broad yellow ends, and you have an arrow reading "Valley Floor—82.5 acres" pointing to it. Where is the section corner there which is surveyed?

A. Right here (indicating).

Q. Right at the place where the arrow touches the spot?      A. Very near the place, just north.

Q. What other section corners do you see there lying south of that?

A. This corner here (indicating).



(Testimony of George W. Colville.)

Q. What is that?

A. Sections 24, 19, 25 and 30.

Q. That lies to the bottom of the exhibit?

A. You will find it on the first exhibit that this is shown on, what we started the survey from.

Q. May I ask this: If, generally speaking, [18] the area which reveals the topography of the country is in surveyed area? A. It is.

Q. And the undepicted part, that was not in the picture taken, that is unsurveyed?

A. The part the picture is taken of is in surveyed territory, yes, sir.

Mr. Wilmer: We offer the exhibit in evidence.

Mr. Morgan: No objection.

The Clerk: Defendant's Exhibit N in evidence.

(Said document was received in evidence and marked Defendant's Exhibit N.)

Q. (By Mr. Wilmer): Now, Mr. Colville, did you make a computation of the area which lies in the basin below the Bagdad point of diversion, and above the place where the basin narrows down to a very narrow channel? A. We did.

Q. And what is the area?

How much acreage is there in this portion there?

A. 1,374 acres.

Q. Did you also by actual survey compute the amount of acreage which lies from the area at the bottom of the basin down to the Zannaras point of [19] diversion? A. We did.

Q. How much acreage is there in that channel?

(Testimony of George W. Colville.)

A. Eighty-two and a half acres.

Q. You have marked on here with an arrow, "Shaded Area, 1,374 Acres." That is the acreage in the basin lying below the Bagdad sump and above the narrow channel? A. It is.

Q. And where you have marked "Valley Floor—82.5 acres," that is the computation of the amount of area in the channel below what we generally call the Kingman Crossing? A. Yes, sir.

Q. Are the boundaries of that basin, and the channel below fairly well marked and defined?

A. They are well defined.

Q. With respect to the type of area below the Bagdad sump, and to approximately the Kingman Crossing, generally, what type of vegetation do you observe?

A. There is mesquite trees, and cottonwood trees, and various other trees, and the usual desert vegetation.

Q. And is it mostly gravels and sands, or, generally, from your observation, what type of [20] ground is it?

A. It is principally, on the ground observation, it is principally gravels and sands, and silts.

Q. From that point down to the old Kingman Crossing? A. Yes, sir.

Q. And from the Kingman Crossing down to Mr. Zannaras' mill, generally what is the condition of the bed of the creek?

A. Well, it is thin gravel sheet, as near as could be observed, over bedrock.

(Testimony of George W. Colville.)

Q. There is quite a little bedrock outcropping from there on out?

A. Quite a little bedrock outcropping.

Q. Have you had the benefit of an aerial view of the topography of the country?      A. I have.

Q. In so viewing that area, George, is it quite apparent that there is an old channel which does not follow the bed of Burro Creek beyond the Kingman Crossing, or did you note that?

A. I wouldn't state that definitely.

Q. Now, at the time that this survey was made, which I believe was just recently—you did this just in the last several weeks, did you not? [21]

A. Yes, sir.

Q. Who accompanied you on that survey?

A. There was Horace Smith.

Q. Who is he?

A. He works for me in my office. And E. H. Girard, Jr.

Q. He is another employee?

A. He is another employee in my office.

Q. Who else?      A. And P. L. Gable.

Q. They were all in your survey party, were they?      A. Yes, sir.

Q. Who else?

A. E. L. Jones. And E. C. Roe.

Q. You had a complete survey party, is that correct?      A. Yes, sir.

Q. Now, in addition to that, did you observe certain geophysical examinations being made of the area?      A. I did.

(Testimony of George W. Colville.)

Q. By whom were those made?

A. Doctor Thiele.

Q. And what part, if any, did you play in those geophysical examinations? [22]

A. I was there when some of the readings were taken on the instruments.

Q. You observed him making his tests up and down the valley there?

A. Yes, sir; on several occasions.

Q. How long was Dr. Thiele there making this examination, do you know?

A. It was several days.

Q. He could tell us better than you could?

A. Yes.

Mr. Wilmer: Cross-examine.

### Cross-Examination

By Mr. Morgan:

Q. How much time did you put on this survey?

A. Surveying from the old Kingman Crossing, as it is generally known, we spent two days in the field with field parties.

Q. That is down to the Kingman Crossing, you mean?

A. Yes; from the old Kingman Crossing down to the point of diversion.

Q. Two days on that?

A. No; one day on that.

Q. One day on that?

A. Yes. And one day on the other part of the

(Testimony of George W. Colville.)

map, from the section corner down to the point [23] of diversion as shown on the first exhibit.

Q. You just spent two days in the field?

A. Yes, sir.

Q. How did you measure all that territory in two days?      A. Measured by stadia distance.

Q. No chain measurements, then?

A. No, sir.

Q. That is all the time you spent in the field on this?      A. Yes, sir.

Q. How many hours a day did you spend in those two days?

A. Well, I would say it would run around nine or ten hours it took us on each day.

Q. Each day?      A. Yes.

Q. Did that include the time you went down there and then back to the office?

A. Yes. It took about—it takes about half an hour to go from the office down to the Kingman Crossing.

Q. And a half an hour back?

A. Yes. However, on that time when we surveyed down there, we didn't walk the distance both ways, because we left the car at one end, and [24] only had to walk the distance once, and was picked up by another car at the other end.

Q. Now, then, Mr. Colville, you said something about the Zannaras point of diversion being two miles away from something. What did you mean by that?

A. That was from the—that was as it was in the



(Testimony of George W. Colville.)

application, as I saw it, and the measurements in the field.

Q. The application shows that it is near, the point of diversion is near the point of junction of Bonanza Creek and Burro Creek?

A. It said 11 hundred feet from that section corner.

Q. Doesn't it also refer to being at the junction point of Bonanza Wash and Burro Creek?

A. I didn't make a thorough study of that. It is possible it does.

Q. Do you know where Bonanza Wash is?

A. No, sir; not by that name.

Q. The original wash that comes right down there and runs into Burro Creek just about at the point of the Zannaras point of diversion?

A. I know where that wash is, but I didn't know it by that name.

Q. And it is just at about that point where [25] the diversion actually is, isn't it?

A. It is a little ways upstream from there.

Q. Yes. A. Just a short distance.

Mr. Morgan: Yes. That is all.

#### Redirect Examination

By Mr. Wilmer:

Q. Mr. Colville, referring to what the clerk has handed me from Civil 129 Prescott, Plaintiff's Exhibit 1, which purports to be an application for a permit to appropriate public waters in the state of Arizona by John Phillip Zannaras, referring to Subsection 3. Will you read that, please?

(Testimony of George W. Colville.)

A. Point of diversion is located 1,100 feet north, 67° 30' West from the Southwest Corner of Section 19, Township 14 North, Range 10 West, Gila and Salt River Meridian.

Q. Is that the point you located on Defendant's Exhibit M in evidence as two miles from Burro Creek?

A. That is the point that is plotted up in red on that map.

Q. Which is approximately two miles distant from the creek?      A. Yes.

Mr. Wilmer: I think, if the Court please, [26] this exhibit is already in evidence in this case. Therefore, I will not re-mark this particular exhibit, but I will return that to the clerk.

That is all.

Mr. Morgan: Just a minute. Could I see that?

### Recross-Examination

By Mr. Morgan:

Q. This particular section referred to in this application is unsurveyed, isn't it?

A. No; the section adjacent to it is.

Q. The section referred to in this application is——      A. I think it so states there.

Q. Unsurveyed?      A. I believe so.

Mr. Morgan: That is all.

(Testimony of George W. Colville.)

### Redirect Examination

By Mr. Wilmer:

Q. George, not to quibble about it—as I understand this, and you tell me if this is correct, the beginning point from which this point of diversion is stated is in surveyed area?

A. It is in surveyed area, and is observable in the field. I personally found it.

Q. You don't know how long it has been surveyed, [27] I presume?

A. No; I couldn't say.

Q. But you did find the southwest corner of Section 19, Township 14 North, Range 10 West G & SRM, Gila and Salt River Meridian, being within the Southeast quarter of the Southeast Quarter of Section 24, Township 14 North, Range 11 West, G & SRM in the County of Mohave, the beginning of this is in surveyed territory?

A. Yes, sir.

Q. And ascertainable without difficulty?

A. Yes, sir.

Q. One other thing I might ask you, just to show the method by which you conducted this survey. May I have this other exhibit, please?

Mr. Wilmer: May this be marked for identification?

The Clerk: Defendant's Exhibit O for identification.

(Said document was marked Defendant's Exhibit O for identification.)

(Testimony of George W. Colville.)

Q. (By Mr. Wilmer): Referring to Exhibit O for identification, will you tell me what that is, please?

A. These are cross sections of the Burro Creek basin below our point of diversion, that were [28] taken in the field by field surveys.

Q. This shows the actual result of your survey in the way of a plotted cross section of the bed of the creek?

A. It does.

Q. Did you follow this same method all up and down the creek in determining the extent of the boundaries, and the extent of the area within the boundaries?

A. This was check points up the creek to establish the width of it.

Q. This was the method by which you checked the aerial map to be sure it was accurate?

A. Yes, sir.

Q. Was this method of surveying you have described, was that one which has been recognized as an accurate method of making an accurate survey?

A. It is for the purposes of this survey.

Q. How long have you been an engineer?

A. Since 1937.

Q. 1937? A. Yes.

Q. Have you been actively engaged in the engineering practice—in the practice of the engineering profession since that time?

A. I have. [29]

Q. Of what school were you a graduate?

(Testimony of George W. Colville.)

A. I am not a graduate from the school. I attended the Ohio State University.

Q. Which university?

A. I attended the Ohio State University.

Q. Has your work, since you have been working as an engineer, been, a lot of it, involved with survey maps?

A. A considerable part of it.

Mr. Wilmer: That is all.

Mr. Morgan: Just one minute.

### Recross-Examination

By Mr. Morgan:

Q. Exhibit O for identification generally covers what territory?

A. That covers the basin between the Burro Creek crossing and our pump, the lower part of it.

Q. That is to the north of the Kingman Crossing?

A. North of the Kingman Crossing.

Q. And the purpose of that is what?

A. Was to establish the width of the alluvial materials in the basin, and the width of it.

Mr. Morgan: No objections.

Mr. Wilmer: I offer Exhibit O in evidence.

The Clerk: Defendant's Exhibit O in [30] evidence.

(Said document was received in evidence and marked Defendant's Exhibit O.)

Mr. Wilmer: That is all.

(Witness excused.)



HEINRICH J. THIELE

called as a witness in behalf of the defendant, having been first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. Will you state your name, please?

A. Heinrich J. Thiele.

Q. Where do you live, Dr. Thiele?

A. I am living in Tempe.

Q. How long have you lived there?

A. Since May, 1953.

Q. Doctor, what universities are you a graduate of?

A. I graduated from the Clausthal School of Mines in Germany, and the Montana School of Mines in Butte, Montana, and Technical University of Berlin in Germany.

Q. Tell me when you first graduated from the first university you named, Doctor? What was the year when you first got out of school?

A. 1936.

Q. Then I believe you attended the [31] Montana School of Mines?

A. The Montana School of Mines. I got my Master's degree.

Q. When was that?           A. 1937.

Q. You spoke of a school in Germany. When did you graduate from that?           A. 1936.

Q. Then you came to this country, did you?

A. Yes, sir.

(Testimony of Heinrich J. Thiele.)

Q. And attended the Montana School of Mines?

A. I did.

Q. After you got your Master's degree from the Montana School of Mines, you then returned to Germany?

A. I returned to Germany and was working as a geophysicist, and employed by the state in the Geophysical Institute in Potsdam.

Q. You spoke, then, of graduating from another university in Berlin? A. Yes.

Q. Which was that?

A. Technical University in Berlin, Charlottenberg.

Q. What degree?

A. Engineering degree, mining engineer.

Q. What degrees do you have presently? [32]

A. Doctor's degree in engineering, Master's degree in Mineral Dressing, and Engineering degree in Mining Engineering.

Q. Will you tell me, Doctor, when you were in Germany, what particular type of work you did there?

A. Since 1942, I am a ground water consultant.

Q. When you were in Germany?

A. In Germany.

Q. What did your work consist of in that respect?

A. The water supply, and the research for ground water deposits for states, communities, cities, larger industries.

Q. That is, for the purpose of consultant with

(Testimony of Heinrich J. Thiele.)

respect to underground water supplies, and available sources of underground water?

A. Yes, sir. I made a large study of the whole country for the amount of water that is available, and where to start, and where it can be found.

Q. Since you have been in this country, Doctor, have you done any underground water studies in the valley?

A. Yes; I have done that for the Water Users Association in Phoenix. [33]

Q. How long did you spend for the Water Users in making the study which you made for them?

A. I started in May 1st, 1953.

Q. And that was with respect to what investigation, what type of investigation?

A. It was ground water geological, hydrological, and geophysical investigation.

Q. Have you done any similar investigations for any other groups or people in the valley, Doctor?

A. I started with a similar investigation for the Indian Service, for the Indian Council in Sacaton.

Q. In addition to that, are you generally practicing as a consultant with respect to ground water in similar matters?

A. Yes, sir.

Q. In connection with your education, Doctor, and I presume your continuing education since, have you prepared any scientific papers?

A. Yes, sir. I published part of a textbook in 1952, and some other papers. Here are the papers (handing to counsel).

Q. With respect to the State of Arizona Under-

(Testimony of Heinrich J. Thiele.)

ground Water Commission, have you acted as a consultant for that group?

A. Not for the State Underground Water [34] Commission, but I was working together with the secretary of the Commission.

Q. I believe you live in Tempe?

A. I am living in Tempe.

Q. Have you done any work in connection with any of the teachers at the Tempe School, of a scientific nature?

A. I am working together with some of the scientific teachers in the college.

Q. Tell me, Doctor, with respect to this old world of ours, do underground water conditions vary in accordance with the race of people that lives above them, or are they pretty much the same, generally speaking, everywhere?

A. The underground water conditions changed quite a bit since the population increased.

Q. I meant by that, Doctor, conditions with respect to underground water in Germany, for instance, or in England, or in Arizona, they vary some, but substantially they are pretty much the same?

A. No. All these underground water conditions obey the big hydrological cycle.

Q. The scientific principles that are involved do not vary with the nation occupying the soil at that time? [35]

A. That is right. In some countries you have higher evaporation, and some countries higher rain-

(Testimony of Heinrich J. Thiele.)

fall, but the basic principles are the same everywhere around the world.

Q. Now, Doctor, in making a study of water, its sources, and where it goes to, what means do you employ?

A. I am using geophysical, geological, geochemical, and hydrological means.

Q. Would you start with the first one, and tell me what that is, Doctor, and what your training has been with respect to that?

A. Geophysical means are used to determine the different physical properties of the rocks and the underground water conditions, such as electrical means, which shows the conductivity, or the reverse means the resistivity of the ground.

Q. That means the resistance of the ground?

A. The resistance of the ground, of the body that is three-dimensional shaped, is not called resistance, but resistivity.

Q. I don't know very much about that, I know, Doctor. Would you tell me a little bit more how that works, and whether or not it is a generally accepted method?

A. This is a generally accepted method and [36] this is one of the papers of the Department of Interior, United States Bureau of Mines, Circular No. IC6899, Geophysical Prospecting of Underground Water in Desert Areas, by F. W. Lee.

Q. This geophysical method of prospecting has been used by the Department of the Interior for how long?



(Testimony of Heinrich J. Thiele.)

A. This has been used since the last thirty years.

Q. Do other industries use it also?

A. Yes, sir. It is used chiefly in the oil industry for determining the different strata in a bore hole. When you are boring down a bore hole, it means you don't core samples any more. You have to determine the different character of the different sediments with geophysical means, and this is the same procedure as is used, electrical procedure, to determine what kind of material is in the bore hole encountered, and even it is determined with electrical means, the permeability, and the amount of oil that can be found.

Q. Can you tell me, Doctor, the next scientific approach that you brought to a study of this problem? You said geophysical. What was the next?

A. By geological means.

Q. By geological, you mean what? [37]

A. The general geology of the country, the structural trends.

Q. Has that been a portion of your education, Doctor, the study of geology?      A. It has.

Q. Following the geological study, what did you do?

A. After the geological study, I made a general hydrological study.

Q. That means what?

A. About the water flow in the streams, the rainfall, evaporation.

Q. You studied the records with respect to weather?

(Testimony of Heinrich J. Thiele.)

A. I studied records of the U. S. Weather Bureau and the Geological Survey with respect to the underground water conditions, the surface water conditions of this area, not to forget the records of the U. S. Department of the Interior, Bureau of Reclamation, with respect to this area.

Q. With respect to what area?

A. With respect to the Burro Creek area, or the larger area, the Lower Colorado River Basin.

Q. That is a study which has been made by the Reclamation Service of the Lower Colorado Basin, including the Bagdad area, is that correct? [38]

A. That is correct.

Q. From that did you get the records with respect to the average rainfall, the average rate of evaporation, and similar data with respect to the Bagdad area?

A. I did, from these different organizations.

Q. When you started to make this study of the area, what did you first do, Doctor?

A. I first studied the conditions at the known sites where we had test holes and bore holes, and we actually could see the geological conditions, sub-surface conditions and depth of the water table.

Q. How did you first see the area?

A. I first saw the area by air.

Q. You flew over it?

A. I flew over it to get a general impression. I have been flying over this area to get a detailed picture three times.

Q. And then after you had done that, you got

(Testimony of Heinrich J. Thiele.)

the general geological, topographical view of the matter, then you made a study of known data on the ground, is that right?      A. I did.

Q. Which included what?

A. It included the testing of boring cores, cores that had been run by test drilling. [39]

Q. And where did you examine those?

A. I examined those in the Burro Creek valley.

Q. And did you make any examination with respect to the standing water table in the valley?

A. Yes, I took a look in different well sites to find out the depth to the water table.

Q. Then after you had made a general observation, did you then proceed to detailed examination?

A. I went into detailed examinations and started with the geophysical survey.

Q. Doctor, could you, in your aerial survey, and in your ground examination of the place, could you determine a mountain range, or what appeared to be a mountain range and its course?

A. Yes, I can.

Q. Where does that lie with respect to Burro Creek and the Bagdad point of diversion?

A. If I may explain on the exhibit?

Q. Yes.

The Court: We will have our morning recess.

(Recess.)

The Court: You may proceed.

Q. (By Mr. Wilmer): Doctor, I believe you stated you had prepared a textbook?

(Testimony of Heinrich J. Thiele.)

A. Yes, sir. [40]

Q. What is the name of that?

A. Ground Water Exploration. And I have written the second part of this book, Geoelectrics in Ground Water Exploration, published by the German Association of Gas and Water Works.

Q. These various papers you have handed me are some of the additional papers which have been prepared, which you have had published, is that correct?

A. Yes. And this is a copy of my diploma for Doctor's degree, dealing with the same type of work.

Q. What you are referring to is this?

A. My doctor's thesis.

Q. Would you mind reading that, so I would know what it says?

A. It says I received my doctor's degree for a dissertation dealing with Geoelectrics in Ground Water Exploration, and an additional paper on Ground Water Hydrology and water supply of der flandrischen/Nordseemarschen, of the northern parts of Belgium and the Netherlands.

Mr. Wilmer: Would you mark those for identification.

The Clerk: Defendant's Exhibit P for identification. [41]

(Said documents were marked as Defendant's Exhibit P for identification.)

Q. (By Mr. Wilmer): Going back just a min-

(Testimony of Heinrich J. Thiele.)

ute, Doctor, on the geology of this situation. Generally speaking, can you tell whether the mountain range which lies to the, I believe you said to the—maybe you better say. Have you prepared a diagram?

A. I have prepared a rough sketch showing the trend of the mountain range from the Big—from the Aquarius Mountains, the Grayback Mountains, the Miller Mountains, and Big Ship Mountains. It is the mountain range extending from north north-east to south southwest.

Mr. Wilmer: May I have this marked for identification?

The Clerk: Defendant's Exhibit Q for identification.

(Said document was marked Defendant's Exhibit Q for identification.)

Mr. Wilmer: So the court and counsel can see what you are doing, Doctor, I will put this on the board.

Q. (By Mr. Wilmer): Now, Doctor, would you explain the diagram you have prepared, and identify first all the various [42] points?

Mr. Morgan: We object to that unless it has been offered in evidence.

The Court: We can use it until Mr. Fletcher testifies. Go ahead.

The Witness: We have here Boulder Creek going here from the north, flowing in a western direction, and joining Burro Creek. Burro Creek is



(Testimony of Heinrich J. Thiele.)

flowing here through a basin that has been determined already before, and flowing into the mountain range that is noted in brown color on this sheet. (Indicating.)

Q. (By Mr. Wilmer): Will you tell me for the purpose of the record, Doctor, do the streams on there have the appropriate names on them?

A. Yes, sir.

Q. They show Boulder Creek and Burro Creek written on the map?

A. Boulder Creek and Burro Creek are written on it.

Q. Now, the brown chalk, or brown crayon trend that you have shown there, what does that represent?

A. This trend represents a mountain range consisting of different types of igneous rock, such [43] as granites, diorite, gneiss, and schist.

Q. You have indicated in pink, or red color, a basin?

A. This is a little basin, the Burro Creek Basin that has been shown already in Exhibit No. M or N.

Q. That is the one Mr. Colville testified to surveying, is that correct?

A. Yes. The lower part of it has been surveyed.

Q. Will you tell me, Doctor, if at about the point where Burro Creek enters the mountain range, that is where the rock comes out?

A. Here comes the bedrock out.

Q. And from that point on down, is it pretty generally bedrock?

(Testimony of Heinrich J. Thiele.)

A. Bedrock overlain by gravels.

Q. And you made an examination to determine the average depth of those gravels, did you?

A. I did.

Q. Did you make an examination to determine the average distance of the alluvial deposits in the basin that you have shown there in red?

A. I did.

Q. Now, Doctor, can you tell, geologically speaking, whether that mountain range is rising or [44] sinking?

A. This mountain range is rising. You will find everywhere along the walls of the canyons large boulders at a height of a hundred feet and above.

Q. Without attempting to explain why, is that generally accepted geologically as a fact that that particular area is rising rather than sinking?

A. It is generally accepted that we still have movements all over the state today.

Q. Now, with respect to the surveys of the ground there, Doctor, can you by visual examination determine an old channel which at one time probably represented the course of Burro Creek?

A. Yes, you can from the air, because you can see very easily outcropping bedrock. On the other side of this basin again you see bedrock cropping out in the river bed.

Q. Now, you are pointing down to a point at approximately the Bagdad point of diversion?

A. Yes, near the Bagdad point of diversion.

Q. Above that?

(Testimony of Heinrich J. Thiele.)

A. Yes, above it we have bedrock. Distinctly at the Bagdad point of diversion bedrock is cropping out.

Q. Then do I understand from the Bagdad point of diversion to the north and northeast you [45] see bedrock and mountains?

A. Bedrock overlain by cemented material.

Q. Then at approximately the Kingman Crossing, you again see the outcropping of bedrock?

A. Yes, right here.

Q. Can you also see where the old channel of the Burro Creek lays to the direction which it formerly took?

A. Yes, it took this former direction. (Indicating.)

Q. How do you determine that, Doctor?

A. You can see it from the air. We determined it by geophysical measurements, in establishing the depth of bedrock, and, on the other hand, flying over the area to get a view of this old channel.

Q. You say you made certain geophysical examinations to determine the depth of the bedrock. I think it might be helpful at this point, Doctor, if you tell us how that is done?

A. Well, this is the ground surface. And when you take a battery in this circuit, an amperemeter, and send the current into the ground, you get a closed circuit. (Illustrating on blackboard.) And the penetration depth of the current is determined by the distance between these two stakes. [46]

Q. Let me stop just a minute, Doctor, because

(Testimony of Heinrich J. Thiele.)

this is going in the record, and it is a little indefinite.

You have shown a ground surface?

A. Yes.

Q. And you have shown two lines that you have indicated?

A. Two electrodes.

Q. Those are electrodes; are they?

A. Yes, electrodes.

Q. And they are set into the ground. How far are they set in?

A. Set into the ground?

Q. How far?

A. To a depth of one foot.

Q. A depth of one foot?

A. Yes, sir.

Q. And how far apart are those electrodes that are set in the ground?

A. We are starting with a distance of about six feet on each side.

Q. On each side of what, now?

A. Of the center stake.

Q. And the center stake is what?

A. I am sitting here with my instrument.

Q. And what is your instrument? [47]

A. My instrument is an electrical compensator, to compensate a potential of an electrical current that is in the ground, against the potential of batteries that you have in the instrument.

Q. What is the source of the electrical current that you use to put into the ground?

A. The source is electricity in batteries.

Q. It is a field geophysical plant, is that right?

A. Yes.

Q. Can you tell us a little bit how you determine

(Testimony of Heinrich J. Thiele.)

when the depth at which it is to bedrock by that method?

A. Yes. Assume that you have two different layers in the ground, this gravel here, underlain by bedrock. (Indicating on diagram.)

When you start with an electrical measurement, with a small distance like this, your current is flowing to this depth here, and when you plot now the actual electrical values in this material against the depths—this is the depth, this is the resistivity (indicating) you get for this distance one point of the resistivity curve.

Say, this is one hundred ohmmeters. An ohmmeter is the generally acknowledged unit of the resistivity. Two hundred, [48] three hundred, you get for this distance, for this depth, now, at one point, and you increase the depths and you get another point. That stays at the same value. Of course, so long as you are staying in the same material.

Now, then, when you come with your current into this second layer, let us assume they have lower resistivity, your values will decrease. And with this increase in depth you come to the true value of this material and receive the resistivity.

Q. You said you come to the true value of the raw material?

A. The true value of the raw material.

Q. The true characteristic of this material?

A. The true characteristic of this material. Assume we have here a characteristic of 300 ohmmeters, and we have here a characteristic of ten ohmmeters.



(Testimony of Heinrich J. Thiele.)

Then you receive this curve that is ending practically in ten ohmmeters, ten ohmmeters here. For the interpretation of this boundary there exists certain standard curves, curves that have been calculated with the differential analyzer, and standard mathematical and physical interpretations, and you can determine with the help of these curves this boundary here, and the exact value of the resistivity of the lower layer. [49]

Q. May I ask you this, Doctor, because I am afraid I don't understand what you said.

In the use of this geophysical method of determining depths to underground bedrock, such as, we will say, for dam footings? A. Yes.

Q. And similar uses. Has the practical value been determined through actual excavation and a finding that the geophysical determination was accurate?

A. Yes, it has.

Q. In other words, may I ask you this, Doctor? What is the percentage of error, if you know, with respect to the use of this scientific method of determining depths to bedrock? A. Ten per cent.

Q. That lies within the 10 per cent of error?

A. Yes, sir.

Q. If you gauge it at 100, it could be 90 or 110?

A. Yes.

Q. Is that a scientifically accepted fact?

A. That is scientifically accepted.

Q. All right, you might sit down, if you wish, Doctor.

With respect to the channel which Mr. Colville

(Testimony of Heinrich J. Thiele.)

testified to, or, rather, the basin— [50] could I have that Exhibit N.

I am referring to Defendant's Exhibit N in evidence. When did you begin your examination of this area, Doctor?

A. I started with my examination February 18th.

Q. Of this year? A. Of this year.

Q. And how much time have you devoted to it since that time? A. Up to this day.

Q. How much time did you spend actually in the field making measurements and examinations?

A. Two-thirds of the time.

Q. Two-thirds of that time? A. Yes.

Q. Is that correct? A. That is correct.

Q. So you have spent, this being the 10th I believe, you have spent approximately 18 days in the field? A. I can give you the exact data.

Q. It isn't important, Doctor. Approximately two weeks, or that? A. About two weeks.

Q. And that is actual field work, is that [51] correct? A. Actual field work.

Q. How many people did you have assisting you?

A. Changing with the time, between four and six.

Q. And what was the purpose of having that number helping you?

A. These people had to place the stakes into the ground, the electrodes into the ground with the changing distance, where I received the changing depths.

A. As I understand it, you start with the two elec-

(Testimony of Heinrich J. Thiele.)

trodes a given distance from your central station where you have your instrument?

A. Yes. And I am picking up to complete the picture. I have here the setup where I have a Wheatstone Bridge arrangement. (Indicating on diagram.)

Q. The what?

A. Wheatstone Bridge arrangement.

Q. That is the Wheatstone Bridge?

A. Wheatstone Bridge.

Q. Now, that is the instrument that you use in your calculation?

A. Yes, that is the physical setup.

Q. And then you move these electrodes [52] out——

A. Out to a greater distance.

Q. How many times will you move the electrodes to make a reading at a given point, or is there any specific number?

A. You measure to a depth of 3,000 feet, and you have to move these electrodes 30 times.

Q. Now, how many different stations, Doctor, did you take these readings at?

A. Sixty-five stations.

Q. Now, does that include the entire distance from the Bagdad diversion point down to the Zannaras millsite?

A. It does.

Q. Now, before I forget it, I want to ask you one other question which I didn't ask in relation to this exhibit, which is Q for identification. I will offer it in a minute.

Can you tell me, Doctor, if at the lowest point of the Burro Creek basin, as it is marked on here, that

(Testimony of Heinrich J. Thiele.)

is, where it enters the red, if at that point the old channel turns and goes along the northwest side of the brown area which you have indicated as constituting generally the mountain range?

A. Yes, it does. It enters the mountain range there. [53]

Q. I am speaking now of the old channel which you testified that you could see from the air, which you have indicated by a blue arrow pointing to the southwest? A. Yes.

Q. Beyond this point here, does that channel go into the mountains, or does it go along the northwest side of the mountains?

A. Along the northwest side of the mountains.

Q. Now, Doctor, in the study which you made, then, I take it that you calculated, determined the depth of the basin from the Bagdad sump to the Kingman Crossing, roughly, which I am going to refer to as the bottom of the basin, and then you also calculated the average depth of the materials from the Kingman Crossing to the Zannaras mill?

A. I did.

Q. Was Mr. Colville working there during the time you were there?

A. Mr. Colville was working at the time when I was there.

Q. As a matter of fact, he helped you in some of your work, is that right? A. He did.

Q. In establishing stations?

A. He did. [54]

Q. Doctor, did you then determine the depth of

(Testimony of Heinrich J. Thiele.)

material in the basin above the Kingman Crossing with sufficient accuracy that you could plot it on a map or a graph to show it?      A. I did.

Q. Is that true also of the material in the depth lying below the Kingman Crossing to the Zannaras mill?      A. That is true.

Q. And did you prepare such a plat?

A. I prepared such a plat.

Mr. Wilmer: May this be marked as Defendant's Exhibit R.

The Clerk: Defendant's Exhibit R for identification.

(Said document was marked as Defendant's Exhibit R for identification.)

Mr. Wilmer: I will put this on the blackboard.

Q. (By Mr. Wilmer): Referring to Defendant's Exhibit R for identification, if you were to take a knife and cut down the center line, if you could do that, of Burro Creek from the Bagdad diversion point, which is at point B, as shown on the upper righthand corner of the map, to the Zannaras pump, is that generally what you would see with respect to [55] overlaying of gravels, alluvial materials and bedrock?      A. It is.

Q. Is this area which you have colored in blue the old valley that you have referred to?

A. This is the old valley I referred to. The brown color represents the bedrock. The surface contours of this cross-section are related to the level, or approximately to the level of the Burro Creek.

Q. I see you have noted on here the Old King-



(Testimony of Heinrich J. Thiele.)

man Crossing?           A. Yes, sir.

Q. That is approximately where the water rises and gets into bedrock again, doesn't it?

A. Yes, it does.

Q. In addition to the soundings, or the geophysical examination which you made in the actual bed of Burro Creek, did you make any examinations to determine in this area here whether in fact there did exist an old channel here?           A. I did.

Q. Where did you make the soundings in these examinations?

A. These points are given in this chart here, numbers 13, 14, 15, 16, 17 G<sub>1</sub>, D<sub>7</sub>, 6, and 5. (Indicating.) [56]

Q. I see. Did you go outside the basin to see if the channel extended in that direction?

A. I did on the other side here.

Q. And what did you determine?

A. We found the basin with a depth of bedrock at approximately 1,200 feet above sea level.

Q. And how does that compare with the basin there?

A. It compares completely. We have the same depth.

Q. That was made lying up on the——

A. On the mesa.

Q. And does that generally conform with what you see from the air as an old channel sweeping through there?           A. It does.

Q. And what is the geological explanation of that?

(Testimony of Heinrich J. Thiele.)

A. Older sediments have been settling down on top of the bedrock. The age is not determined of these sediments, but it is published in the paper of the office of the Arizona State Water Commission, "Ground Water Resources of the Big Sandy Valley, Mohave County, Arizona," by Roger B. Morrison, December, 1940.

This material has been determined [57] in the Big Sandy Valley.

Q. In other words, then, Big Sandy lies about four or five miles beyond this point?

A. Yes, sir. And we see this material on top of the mountain range at certain places, and also on the other side of Big Sandy, and it has been determined here as older fill.

"The older valley-fill deposits directly overlie the basement rocks and earlier volcanics. They consist of two principal members of similar age, which grade laterally from one into the other. Exposed near the highlands is the fanglomerate-breccia member, and indistinctly stratified piedmont deposit which includes more or less angular fragments of all sizes. It is so poorly sorted that it locally resembles a glacial till. This member grades laterally toward the interior of the valley from coarse to finer-sized material and into lake beds."

The same as we observe here, the same we observe here, where it is running off as a lake bed deposit.

"The latter are chiefly silt, fine silty sandstone, and clay, laid down while the Big Sandy River was temporarily dammed [58] by faulting and thus formed lakes within the several basins. In some

(Testimony of Heinrich J. Thiele.)

places there are beds of concretionary limestone, volcanic ash, gypsum, analcite sandstone, diatomite, and bentonite. Along the eastern margin of Wickiup Basin the lake beds are locally interbedded with basaltic lavas. Here the lake beds are also in many places deformed by small closely-spaced faults. Because the faults are normal and nearly all dip westward the aggregate effects of the faulting have unquestionably been large, for the displacements were cumulative and involved successive downdrops to the west."

Q. Doctor, is it your opinion that at some time, you don't know how long ago, that the course of the Burro Creek, instead of going through the mountains where it now goes, followed a course on the north and west of the mountain range, and into the Big Sandy, and in that fashion?

A. It is.

Q. Let me ask you this, Doctor. The old channel which follows along to the north and west of the mountain range, unless it were of a different material, then your alluvials in here would unquestionably carry off a substantial part of the [59] water underground, would it not?

A. That is right.

Q. Because it would be coming up against a bedrock dam, so to speak, which is evidenced at that point?

A. We have practically an underground dam site that acts for the ground water as the underground dam at this point. The older material, it is

(Testimony of Heinrich J. Thiele.)

said in this same paper here, at page 3, and I will read it:

“Both members of the older fill are relatively impervious. No well-sorted ‘clean’ beds of sand or gravel which would make good aquifers were seen in either the fanglomerate-breccia or the lake beds. In a few places wells have obtained water from the fanglomerate-breccia, but the capacities of nearly all of these wells are relatively small.”

It shows we have a certain permeability. It is not impervious, but water can seep through the gravels into this material at certain places.

Q. In effect, you have at the point of the Kingman Crossing, and extending across the present channel of Burro Creek a stone dam, do you not?

A. Yes.

Q. Which extends in a southerly direction [60]—which extends in a southwesterly direction at the base of the mountain range there?

A. Yes, at the base of the mountain range.

Q. Now, Doctor, to clarify the record. There appears a legend on that exhibit with a yellow color, a blue color, and a brown color. Do those colors accurately reflect your determinations as to the type of material that would be found, as shown in the colors on the exhibit?

A. It does. They determine the thickness and the type of the material. The yellow color represents Boulders and Gravels that have been found between Kingman Crossing and Zannaras pump in the thickness of 37 feet, 35 feet, 7 feet, 13 feet, 6 feet, 28 feet, 7.5 feet, 19 feet, and 7 feet.



(Testimony of Heinrich J. Thiele.)

Q. That is between——

A. That is between the Old Kingman Crossing and Zannaras pump.

Q. Now, that is the overlay of sand and boulders and gravels above the Kingman Crossing and up to the Bagdad pump?

A. Above the crossing and it is mounting up to 40 feet, the thickness of the gravel area.

Q. And is that the average depth, or does it vary from place to place?

A. It is also changing in the outcroppings [61] from a few feet or none at all, up to a thickness of 40 feet.

Q. That is the overlay of sand and gravels above the alluvial materials below it?

A. Above the older fanglomerate that is colored blue in this chart.

Q. That is a sedimentary deposit of some kind?

A. We don't know if it is alluvial. We don't know anything about the age. The thickness of this deposit is about 1,200 feet.

Q. That is 1,200 feet of blue? A. Yes.

Q. At the depth of the basin it is 1,200 feet deep?

A. The depth of the older valley that is crossing today's valley is 1,200 feet deep in the center.

Q. In the center. And then it shades out as you have shown it, to the edge? A. Yes, sir.

Q. In other words, if I may express it this way: The Bagdad pump and sump is at one side of the valley, and the Kingman Crossing is at the opposite side of the valley? A. It is. [62]



(Testimony of Heinrich J. Thiele.)

Q. And the valley extends in a northeasterly southwesterly direction? A. Yes.

Q. And the Burro Creek flows across it at an angle?

A. Yes, sir. But we can see on this chart here that the general trend of the flow of conditions have changed locally, but not in the general direction. We see the same direction in the flow of the river, the creek flow from the northeast to the southwest.

Q. And does that exhibit, which is R, Defendant's Exhibit R, accurately represent, Doctor, your scientific findings with respect to the conditions existing from the Bagdad sump down to the Zannaras property?

A. The cross-section represents accurately my findings.

Q. From the standpoint of viewing the surface itself, from the Kingman Crossing to Zannaras Mill, do your observations on the surface confirm your geophysical findings? A. They do.

Q. And tell us why.

A. You see the outcropping bedrock as well in these areas, as well as up here in this area. [63] (Indicating on chart.) We see bedrock coming out here and here along this other side of the valley, and this side of the old valley.

In between we find only the fanglomerate-breccia with its different members, limestones, sandstones, and cemented areas.

Q. Would this be a fair statement, Doctor, that as you come to the lip of the valley, in other words, as you go along this area following the edge of the

(Testimony of Heinrich J. Thiele.)

channel on each side of the edge of the basin, you find outcroppings in the type of materials you would expect because of your geophysical findings?

A. Yes, sir. And the differences of the resistivity values that I explained here are remarkable. We have gravel, the top gravel sheet has a resistivity of 200 to 600 ohmmeters.

The fanglomerate-breccia is recognized by resistivities of 10 and 30 ohmmeters. And the bedrock underneath has a resistivity of more than 100 ohmmeters, again, so there are remarkable differences in the physical characteristics of the different formations.

Q. Did you make a calculation and examination, Doctor, at the point of Burro Creek approximately opposite the Zannaras mill and pump to [64] determine the depth of the gravels and similar materials above bedrock across the creek channel at that point?

A. Yes; I made several determinations, and we found a thickness of the gravel sheet changing between 7 and 37 feet.

Q. Now, to be sure we have the record straight, Doctor, I am referring to the creek bed at the Zannaras mill.

Approximately how wide is the channel of the creek at that point, if you recall, or could you tell from the scale on that chart there?

A. It is widening out here to about 500 feet (indicating on chart). The normal width of the valley is between 200 and 300 feet.

(Testimony of Heinrich J. Thiele.)

Q. And that is mostly surrounded by bedrock, with bedrock outcroppings?

A. Yes. The average width of the valley is 215 feet, as an average taken out of thirty stations.

Q. And at the point where the Zannaras pump is in the creek, from bank to bank of the stream there you found a difference of from 7 feet to 40 feet of gravels, did you?

A. Yes, and bedrock at some places—at this station, at this edge of this side, bedrock crops out directly.

Q. At the site where the pump is? [65]

A. Yes.

Q. Then across where the other—

A. Bedrock dips in and comes out the other side again.

Q. I didn't quite understand, myself, I guess. The bedrock crops out, or there is bedrock showing on the east bank of the channel at the Zannaras pump? A. Yes, sir.

Q. Then from that point across to the opposite bank, what type of material is there in the creek bed? A. We have gravel in the creek bed.

Q. And did I understand you to say the depth was from 7 to 40 feet? A. To 37 feet.

Q. So that you do have in the creek bed at that point gravels up to 37 feet in depth?

A. Yes. The point where we have 37 feet is about 300 feet north.

Q. Of the pump? A. Of the pump.

Q. Now, Doctor, is there a known method of

(Testimony of Heinrich J. Thiele.)

calculating the amount of water which will move underground, if you know the materials through which it is moving? [66]      A. There is.

Q. Are there handbooks that are used in connection with determining the—what did you call it, of the ground?

A. The permeability of the ground.

The Court: We will go into that after lunch. We will suspend at this time until 2:00 o'clock.

(Thereupon, at 12:00 o'clock noon a recess was taken until 2:00 o'clock p.m. of the same day.) [67]

Tuesday, March 8, 1954—2:00 o'Clock P.M.

(Hearing resumed pursuant to recess.)

The Court: You may proceed.

HEINRICH J. THIELE

resumed the stand and testified further as follows:

Direct Examination

(Continued)

By Mr. Wilmer:

Q. Before going back to where we quit before the noon recess, Doctor, have you done any lecturing or teaching in this country?

A. I have been lecturing in ground water courses of the U. S. Geological Survey in Austin, Texas, in the University of Texas.

(Testimony of Heinrich J. Thiele.)

Q. At the University of Texas? [68]

A. Yes. In March, 1953.

Q. Now, Doctor, coming back to this point where we left off, with respect to a stream such as Burro Creek, where you have surface flow, and also gravels and sands, we use the term surface water and ground water. Actually, in a stream such as that, is there any difference between the surface flow and the ground flow, or are they just one body of water?

A. No; there is no difference. I am reading something out of this report I mentioned already, on the Water Supply of the Lower Colorado River Basin, as given on page 67:

“In the hydrologic cycle, there is a close inter-relationship between surface water and ground water. In some areas ground water contributes to the flow of the streams, whereas, in other areas the streams feed the ground water. For example: When water percolating through the soils and rocks reaches an impermeable layer of saturation, it moves laterally under the force of gravity until it is stored in a confined area, or emerges as springs or seeps where the water table intersects the land surface and contributes to the streams.” [69]

Q. Now, I started to ask you before, Doctor, with respect to the permeability of materials, and whether or not there is a handbook with relationship to an established and accepted standard of the amount of water which can be found in various types of ground strata?



(Testimony of Heinrich J. Thiele.)

A. There is a handbook.

Q. What is that handbook?

A. This handbook is "Methods for Determining Permeability of Water-bearing Materials, With Special Reference to Discharging Well Methods," U. S. Geological Survey paper, Supply paper 887, Washington, 1942, by L. K. Wenzel and V. C. Fishel.

Q. Are the tables contained in that customarily used in determining the amount of water which will be found in different types of gravels and materials?

A. Yes. The methods applied in this book are the standard methods, and the tables are the best tables available for comparative, or comparing purposes.

Q. Would you turn to the table with respect to the permeability of gravels and sands, if you have such a table?

A. Yes; here is a table on page 13, Physical Properties of Representative Materials from [70] the United States. And in this table on pages 13 and 14 are given for gravel, sand and gravel, coefficients of permeability from one thousand to 90 thousand gallons per day per square foot.

Q. Now, Doctor, I don't quite follow that. Would you tell me, if you would, the practical application of that with respect to any studies of sand and gravel, and as to the amount of water either found in them or yielded by them, or traversing them?

(Testimony of Heinrich J. Thiele.)

A. Yes. I am going to read something from page 7 about the coefficient of permeability, to give a clear picture of this:

“The two coefficients of permeability are used by the division of ground water of Geological Survey. One coefficient is defined by Meinzer as the rate of flow of water, in gallons a day, through a cross-sectional area of one square foot under a hydraulic gradient of 100 per cent at a temperature of 60 degrees Fahrenheit. This coefficient may be expressed in field terms as the number of gallons of water that would be conducted, were the temperature of the water 60 degrees Fahrenheit, through each mile of water-bearing bed [71] under investigation (measured at right angles to the direction of flow) for each foot of thickness of the bed, and for each foot per mile of hydraulic gradient.”

That means when you want to determine the amount of flow in the underground, you have the coefficient of permeability, times the slope of the water table measured in feet per mile, times the thickness, as I say, the square section of the aggregate.

Q. The square section of the aggregate?

A. The square section of the aggregate of the aquifer of the water-bearing material. This is the term in square foot.

Let us assume a case as we have it up here at the pump station of the Bagdad Copper Corporation. It really has a width of 200 feet, and the thickness of the aquifer is about 15 feet. The test hole there

(Testimony of Heinrich J. Thiele.)

in the center of the stream, of the creek showed a thickness of the gravel material of 15 feet. Bedrock was not encountered yet. But bedrock was coming out of this side, just dipping into the other side.

Let us assume 15 feet——

Q. Before we go further, Doctor, from your examination of the particular area now, which [72] is, I believe, right at the sump of Bagdad?

A. Yes.

Q. From your examination of the stream bed and this test hole that was drilled, and the other examinations you made there, in your judgment is 15 feet a fair average of the overlay of sand and gravel in that area?

A. It is. Because they have outcropping of sand and rock on one side.

Q. That is 215 feet wide, by 15 feet of material above bedrock?

A. That is right. Now, we have the permeability factor between one thousand and 90 thousand. We don't know anything exactly.

Let us take a fair value. That would be 10 thousand gallons per day per square foot.

Q. You say that permeability factor ranges from one thousand gallons to 90 thousand?

A. To 90 thousand.

Q. And you have taken a very low factor of 10 thousand?

A. Yes.

Q. All right.

A. The slope of the water table is about—is 185

(Testimony of Heinrich J. Thiele.)

feet in three miles. We determined it in the basin there. [73]

Q. That was the basis of the survey made by Mr. Colville?

A. Yes, sir. That would make it 60 feet in a mile. It would be a little bit more than one in a hundred. Let us assume one in a hundred.

Then we have here now 300,000 gallons per day per square foot. When we want to put that in acre feet, we have to divide it by 342 thousand.

Let us be fair again. Let us call the whole thing one acre foot a day as the amount of water that is traversing the cross-section of the area at the Bagdad Copper plant. In the Burro Creek Valley—

Q. Let me interrupt you again, Doctor. In other words, if I understand this correctly, based upon your determination of the width of the creek bed, your determination of the depth of the material, and the type of material that it is, you determine that the normal underground flow at that point would be an acre foot a day, or 342,000 gallons of water per day? A. Yes, sir.

Q. That is correct? A. Yes.

Q. Now, what would be the effect, Doctor, if you assumed, instead of the 10 thousand gallon [74] permeability factor, one thousand gallons. That would be one-tenth of that, isn't that right?

A. It would be only one-tenth of that.

Q. And if you assume 90 thousand, it would be nine times that? A. Yes, sir.

(Testimony of Heinrich J. Thiele.)

Q. So that at the lowest computation, you would have one-tenth of an acre foot per day?

A. On your one thousand.

Q. On your one thousand?

A. That is correct.

Q. And on your highest computation, you would have nine acre feet per day? A. Right.

Q. And there are 342,000 gallons in an acre foot? A. Yes.

Q. Now, Doctor, did you make some studies of the U. S. Geological Service records, of which I believe you have a publication with you, involving the average evaporation rates in various parts?

A. Yes. Better than that, we have a table of the evaporation rates of the lower Colorado River basin, in the report mentioned already, on page 27, Table I.

Q. And that gives the average evaporation [75] rates in various sections of the country through each month in the year, is that correct?

A. Yes.

Lower Colorado River Basin, Estimates of Average Evaporation in Inches at Supplemental Stations from 1914 to 1945 period. Station, Bagdad.

The evaporation figures are: January, 1.9. February, 2.5. March, 4.7. April, 6.8. May, 9.3. June, 11.0. July, 11.1. August, 9.5. September, 7.7. October, 5.6. November, 3.1. December, 1.8. Giving an annual total of 75.0 inches.

Q. Now, as I understand that, Doctor, that means that on the average, in the average year at



(Testimony of Heinrich J. Thiele.)

Bagdad, there is a water loss of six to seven feet, or 75 inches?

A. Yes. On the open water surfaces.

Q. From an open water supply? A. Yes.

Q. And that the highest evaporation rate is in May, June, July, and August?

A. The highest evaporation points are in June and July. We have distinctly a curve with the maximum in June and July.

Q. Do you have that exhibit in a certification from the United States Geological Survey of [76] the evaporation rates at Tucson, Roosevelt and Safford?

That is it there?

A. Yes. (Handing document to counsel.)

Mr. Wilmer: I would like at this time, if it please the court, to offer in evidence a certification of the U. S. Weather Bureau at Phoenix, Arizona, showing the amounts of precipitation at Bagdad, Arizona, during the months and years, as follows: From 1940 through 1953, showing the total annual precipitation, and also showing the mean monthly annual evaporation in inches at the stations of the U. S. Weather Bureau at Roosevelt, Safford, and Tucson, and showing the relative elevations of those three points.

Mr. Morgan: No objection.

The Clerk: Defendant's Exhibit S in evidence.

(Said document was received in evidence and marked as Defendant's Exhibit S.)

# DEFENDANT'S EXHIBIT S

## United States of America United States Department of Commerce Weather Bureau

Date: March 3, 1954.

Station: Phoenix, Arizona.

As the custodian of the records of the U. S. Weather Bureau, filed at Phoenix, Arizona, I hereby certify that it appears from such records that the following amounts of precipitation occurred at Bagdad, Arizona, during the months and years as shown:

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1940	..... 1.05	1.93	0.19	0.84	T	0.14	T	0.69	3.90	1.24	1.37	2.49	13.84
1941	..... 2.30	2.90	4.56	3.47	0.20	0.03	2.05	2.05	3.36	1.79	0.57	2.26	25.54
1942	..... 0.44	0.93	0.52	1.28	0	0	1.83	1.21	0	0.19	0.21	0.71	7.32
1943	..... 2.03	0.69	1.23	0.92	0	0	0.51	1.63	2.26	1.28	0	1.21	11.76
1944	..... 0.55	6.28	1.36	0.81	0.05	0	0.03	1.04	1.36	0.76	2.32	1.95	16.51
1945	..... 1.23	0.18	5.33	T	0	0	0.79	2.57	0.02	1.91	0	2.35	14.38
1946	..... 0.60	0.05	1.45	1.29	0.07	T	4.16	1.29	1.61	1.75	1.78	2.02	16.07
1947	..... 0.37	0.11	T	T	0.32	0	0.30	3.80	0.47	0.34	0.26	1.95	7.92
1948	..... 0	0.85	0.72	0.25	0	0.10	2.73	1.03	0.09	0.87	0	2.58	9.22
1949	..... 4.81	0.53	0.13	0.64	0.05	0.60	1.21	0.44	1.60	1.29	0.61	1.21	13.12

## Defendant's Exhibit S—(Continued)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1950 .....	0.77	1.14	0.28	0.19	T	0	3.99	0.19	0.69	0	0.15	0	7.40
1951 .....	1.87	0.67	0.28	3.36	1.42	0	1.15	8.07	0.65	1.77	1.03	1.78	22.05
1952 .....	1.34	0.25	4.23	1.26	0	3.00	0.41	1.00	0.70	0	2.19	0.74	15.12
1953 .....	0.50	0.75	0.15	1.63	0.20	0	1.70	2.24	0	0.04	0.35	0.04	7.60

## Mean Monthly and Annual Evaporation (Inches)

Roosevelt .....	1.83	2.66	4.90	7.16	10.42	12.25	12.28	10.26	8.10	5.33	2.87	1.81	79.87
Safford .....	1.99	3.35	5.32	7.68	9.84	10.90	9.82	8.27	6.47	4.40	2.78	1.89	72.71
Tucson .....	2.32	3.09	5.80	8.49	11.22	12.73	11.72	9.38	8.01	5.77	3.33	1.09	82.95

Elevation of Roosevelt .....2200 Ft.

Elevation of Safford .....2900 Ft.

Elevation of Tucson .....2423 Ft.

/s/ LOUIS R. JURWITZ,  
 Meteorologist in Charge.

Admitted and filed March 9, 1954.

(Testimony of Heinrich J. Thiele.)

Q. (By Mr. Wilmer): Do you know what the approximate elevation of Bagdad is?

A. The approximate elevation of Bagdad is 3,900 feet.

Q. And the Burro Creek is some several hundred feet lower than that? A. 2,400 feet. [77]

Q. 2,400 feet at Burro Creek?

A. In the area of the basin.

Q. Now, for the purpose of showing a table of the evaporation, did you prepare a chart from these certified figures showing the curve of the evaporation at Roosevelt, Tucson, and Safford, with respect to when the evaporation is the highest?

A. Yes. It was done in Bagdad and put on a sheet of paper.

Mr. Wilmer: May this be marked?

The Clerk: Defendant's Exhibit T for identification.

(Said document was marked as Defendant's Exhibit T for identification.)

Q. (By Mr. Wilmer): Referring to this chart, will you tell us just how you prepared it, Dr. Thiele?

A. This chart, the amounts of precipitation are given here in inches per month, January, February, March, and April, and so forth, and it would be easy to show for Bagdad, with 11 inches in June and July, showing the same maximum at the same time of the year—

Q. Doctor, if you would first tell me what these three lines represent?

(Testimony of Heinrich J. Thiele.)

A. These three lines represent the [78] evaporation at Roosevelt, and Tucson, and Safford. Roosevelt elevation, 2,200 feet above sea level; Tucson, 2,423 above sea level; and Safford, 2,900 feet above sea level.

Q. Now, I believe from this exhibit the average monthly, or the average annual evaporation annually at Roosevelt was 79.87 inches; Safford, 72.71 inches, and Tucson, 82.95 inches, as against Bagdad with 75 inches.

Now, for the purpose of illustrating the portion of that water loss that occurs in a year, will you tell us when the greatest percentage of water loss occurs, based upon the record which was introduced in evidence?

A. The greatest loss of water occurs from the months starting April, May, June, July, August, and September.

Q. Now, with respect to——

A. The highest peak is reached in June and July.

Q. And what percentage of the loss, of the total annual loss occurs in that month?

A. In June occur 15.3 per cent at Tucson.

Q. In other words, of your total of 75 inches, 15 per cent of that occurs in that one month alone?

A. Yes. [79]

Q. Did you also have prepared a chart, Doctor, from the U. S. Geological Survey figures, showing the precipitation in the Bagdad area?

A. Yes, sir.



(Testimony of Heinrich J. Thiele.)

Q. With respect to its relationship to normal precipitation for the area?      A. Yes.

Mr. Wilmer: We offer in evidence, if it please the court, Defendant's Exhibit T for identification.

Mr. Morgan: We have no objection, although we think it is immaterial.

The Clerk: Defendant's Exhibit T in evidence.

(Said document was received in evidence and marked Defendant's Exhibit T.)

Mr. Wilmer: May this be marked Defendant's Exhibit U for identification?

The Clerk: Defendant's Exhibit U for identification.

(Said document was marked Defendant's Exhibit U for identification.)

Q. (By Mr. Wilmer): I show you Defendant's Exhibit U for identification, Doctor, and ask you if that chart was prepared showing the precipitation in inches——

A. This chart shows——

Q. Just a minute, Doctor. At Bagdad, in [80] the Bagdad area, from 1930 to 1953, with relationship to the normal rainfall, the average rainfall?

A. Yes, sir.

Q. This is a correct chart depiction of the pictures of the U. S. Geological Survey of that area, at that station?      A. Yes, sir.

Mr. Wilmer: We offer it in evidence.

Mr. Morgan: All this evidence was put in in

(Testimony of Heinrich J. Thiele.)

this case before. This chart was not, but the evidence was, the rainfall records.

We make no objection.

Mr. Wilmer: It was up through 1951, previously.

The Court: All right, it may be received.

The Clerk: Defendant's Exhibit U in evidence.

(Said document was received in evidence and marked Defendant's Exhibit U.)

Q. (By Mr. Wilmer): Without sticking this up there, Doctor, the figure, which is line 14, represents what? I mean, this line through there represents what?

A. This line represents the long year average from 1930 to 1953.

Q. That is this line through here (indicating)?

A. Yes. Of the whole precipitation. And [81] we see that we have a break between 1945 and 1946. Before 1946 we had most years with more than average rainfall. In the years after 1946 we have mostly years with less than average rainfall.

The actual figures for these years, to repeat that: Before 1946—I am giving the yearly annuals—for 1940, 30.84 inches, in 1940. 25.54 inches in 1941. 7.32 inches in 1942. 11.76 inches in 1943. 1944, 16.1 inches. 1945, 14.38 inches. 1946, 16.07 inches.

And then I have to repeat. I made a mistake. Between 1946 and 1947 comes the break.

Then 1947, 7.92 inches. 1948, 9.22 inches. 1949,

(Testimony of Heinrich J. Thiele.)

12.12 inches. 1950, 7.40 inches. That makes four years of rainfall under the normal.

1951, 22.05 inches. 1952, 15.12 inches. And 1953, 7.60 inches. That makes, in seven years, four years with less than ten inches rainfall.

Mr. Wilmer: May this be marked the next exhibit number?

The Clerk: Defendant's Exhibit V for identification.

(Said document was marked Defendant's Exhibit V for identification.)

Q. (By Mr. Wilmer): Now, Doctor, in the previous hearing a [82] computation of the rainfall data at Bagdad up through 1951 was put in evidence. To bring it up to date, I am going to hand you Defendant's Exhibit V for identification, and ask you if that is a computation brought up through 1953, from the Weather Bureau records?

A. This is a computation of the weather records at Bagdad, furnished through the courtesy of W. D. Deacon, Weather Observer with the Weather Bureau.

Q. That is the gentleman sitting back there?

A. Yes.

Mr. Wilmer: We offer it in evidence.

Mr. Morgan: No objection.

The Clerk: Defendant's Exhibit V in evidence.

(Said document was received in evidence and marked Defendant's Exhibit V.)

(Testimony of Heinrich J. Thiele.)

Mr. Wilmer: I believe there was previously admitted also, if it please the Court, a chart which the U.S.G.S. had prepared, showing the readings at the gauge, that is, if the Court will recall, there was a chart which showed certain readings showing a certain amount of water down the river. We have a copy of that, and since that exhibit, I believe, has gone up—you have that?

The Witness: I have it over there. [83]

Mr. Wilmer: It was the chart that shows a quarter on the gauge means so many gallons down the river. I don't need it at the moment. Here it is here. I think, for the purpose of the record, I should mark these at least for identification, because we will be referring to them.

The Clerk: Defendant's Exhibits W and X for identification.

(Said documents were marked Defendant's Exhibits W and X for identification.)

Q. (By Mr. Wilmer): Doctor, in the computation which you have made, did you make use of the chart of the U.S.G.S. which showed the gauge readings, and the amounts of water reflected on that?

A. I did.

Q. That is Defendant's Exhibit W for identification, is that correct?

A. Yes; that is correct.

Q. And I believe that you also made a computation showing the average flow, of the average gauge readings of the flow in 1953 for the purpose of the

(Testimony of Heinrich J. Thiele.)

computation?           A. I did.

Q. That is Defendant's Exhibit X for identification? [84]           A. That is right.

Q. Now, with respect to the amount of water which is moving underground in a stream bed, as distinguished from the surface flow, does that vary from time to time, assuming that you have live water in the stream on the surface? The amount of water?

A. No, sir; It depends only on the permeability of the underground, and the permeability of the unconsolidated sediment is not changing.

Q. In other words, the gravels and sands, and other permeable material that constitute your underground, that is full?

A. Yes. And it is for the time of our life, it is practically stable; only with changes in, complete changes, in the chemistry of the sediment can we have a change in the permeability of the underground.

Q. That occurs very rarely?           A. Yes, sir.

Q. Now, that being true, the rate, or the amount of water which moves downstream in a given stream remains fairly constant from day to day, so long as there is surface water?           A. Yes, sir.

Q. Then, Doctor, I take it that it would be [85] your opinion that in the spring and summer months, so long as there is water flowing on the surface, there would be substantially the same amount of underground water moving that there would be when there was a flood going out?



(Testimony of Heinrich J. Thiele.)

A. It is.

Q. Now, you made a calculation, Doctor, I believe, of the amount of water, which you very conservatively computed was moving past the Bagdad sump in the gravels above bedrock, at one acre foot per day?

A. Yes, sir.

Q. Did you, with Mr. Fletcher from the Tempe School of Forestry, make a computation with respect to the probable loss of water from evaporation and transpiration from the Bagdad sump down to the Zannaras point of diversion?

A. Yes, sir.

Q. Would you tell us how you went about making that calculation?

A. This calculation was made by Mr. Fletcher based on temperature, rainfall, and different other points he is giving evidence on.

Q. You participated in that study?

A. I did.

Q. Now, briefly, Doctor, from the Bagdad [86] point of diversion down to the Kingman Crossing, is the creek bed pretty generally grown with vegetation?

A. The creek bed is grown with 50 per cent of vegetation.

Q. And what type of vegetation?

A. Mesquite, cottonwoods, black willow, and other types of desert vegetation.

Q. And other types? A. Yes.

Q. Now, the rate of evaporation and transpiration from a creek bed such as this, where you have

(Testimony of Heinrich J. Thiele.)

this type of materials, the relation of that to evaporation from a free water surface, is that something you can tell us about, Doctor?

A. Yes, sir. The evaporation at Bagdad was found to be 75 inches. Bagdad is lying in a higher altitude than Burro Creek, the basin which is on the chart.

Q. Does the altitude have something to do with the rate of evaporation?

A. The altitude, the time of daylight hours, the temperatures have to do with this, and we have a higher evaporation in the lower altitude. It is comparable with Tucson. Tucson, we have 82 inches.

Q. Accepting the Bagdad evaporation rate [87] at 75 inches, because that is substantially higher than Burro Creek, you would expect the evaporation rate to be greater there?

A. To increase.

Q. More than 75 inches?

A. More than 75 inches on a free water surface.

Q. Go ahead with the probable water loss in the area below the Bagdad area, in the Zannaras area?

A. The lower part of this basin has nearly all year over water near the surface, or directly at the surface. We have water dammed up at this point here, and causing—with that damming up, that reaches far back to about this area here, and only at this area the water table is deepening and reaches at the Bogle's ranch about 12, 15 feet, average, below the surface.

Q. That is the water table not in the creek bed, but to the side of the creek bed?

(Testimony of Heinrich J. Thiele.)

A. The side of the creek bed. The depth of the water table in this valley, as I have been informed, is not changing much. It shows that though the creek is flowing abundantly and losing water, that you couldn't observe it losing it into the gravel. The water table cannot be built up to the [88] ground surface.

Q. Why is that, Doctor?

A. This is caused by the high evaporation in this area, high evaporation in the whole basin. That is practically a closed basin between these two points.

Q. Can you tell us how the rate of evaporation, including transpiration from the vegetation, relates to the evaporation from an open pan, or free water surface?

A. The evaporation is calculated from different sources differently. The Bureau of Reclamation in Boulder City gives evidence that the estimated ground evaporation in this area is 60 inches in the year. This shows, when we accept again 15 per cent for June of one year, that we would have in one year an evaporation of one foot times 137 acres. That would be 1,374 acre feet in only this basin.

Q. If we accept that figure, that in the month of June you would have 15 per cent of the 60 inches, that would be nine inches, would it?

A. That would be of 60 inches?

Q. Yes. 15 per cent.

A. 15 per cent. No. Yes. Nine inches.

Q. Nine inches, or three-quarters of a foot? [89]

(Testimony of Heinrich J. Thiele.)

A. Three-quarters of a foot. About a thousand acre feet.

Q. So in the month of June, on that basis, Doctor, you would have an over-all evaporation loss of 30 acre feet of——

A. Around one thousand.

Q. A thousand acre feet?

A. That is right.

Q. As against your computation of an input, assuming no surface flow, of 30 acres?

A. 30 acre feet is the surface flow.

Q. However, through the month of June, there is no water passing beyond the sump. You are then losing in that month 970 acre feet out of the basin, net, because you are putting 30 in and losing a thousand, is that right?

A. Yes, sir. I forgot to give the name of the hydrologist of the Reclamation Service in Boulder City. It is Mr. Sullivan, the author of this report. I can give the first names. L. E. Sullivan.

Q. Doctor, may I ask this question: If you compute, instead of 10,000 gallons as a permeability factor, 90,000, there would be that much more water passing by in the gravels at the sump, would there not? [90]

A. Yes; there would.

Q. If you took the highest possible amount, you would then have, instead of the one acre foot which you estimated per month, you would have 90 acre feet; if you took the highest possible permeability factor?

A. That would be 270 acre feet a month.



(Testimony of Heinrich J. Thiele.)

Q. I believe you testified you have one acre foot?

A. A day. Is 30 acre feet a month.

Q. Times nine?                      A. Times nine.

Q. Is 270 acre feet?

A. It can't be so high, because we have granite that is decomposing with the weathering effect. We have building up of clay, and the clay causes a reducing of the permeability.

Q. What I am getting at is this, Doctor: If you take the highest possible permeability factor, which we know can't be true, but still take that, then you have only 270 acre foot input underground, as against a loss of a thousand acre feet in a month?

A. That is correct.

Q. Then if you double the depth of the gravels, which you have given as a generous estimate of 15, and make it 30, you would still simply double [91] your water moving, and get 540 acre feet in a month, against a thousand acre foot loss, is that right?

A. Yes. That means so long as we have no surface flow.

Q. What I am getting at is that when the river reaches a point that the surface flow does not exist, we still are going to say there is from 30 to 270 acre feet passing underground per month. Would that be right?

A. Well, I agree to 30 acre feet. I don't agree to 270 acre feet.

Q. You don't think that is possible?

A. It isn't possible.



(Testimony of Heinrich J. Thiele.)

Q. Now, Doctor, I am going to ask you if you took the U. S. Geological Survey figures from 1902 to 1953, and plotted on Defendant's Exhibit Y for identification the average rainfall, January, February, March, and so forth, August, September, October, November and December, and if that is represented by the brown line which is at the base of that curve?      A. Yes, sir.

The Clerk: Defendant's Exhibit Y for identification.

(Said document was marked Defendant's Exhibit Y for identification.) [92]

Q. (By Mr. Wilmer): Then, Doctor, did you also plot on here the curve showing the pan evaporation at Bagdad, so far as the chart was big enough to show it?      A. Yes, sir.

Q. Which is represented by a broken red line with the words Pan Evaporation pointed to it?

A. Yes.

Q. Did you then take the figures, Doctor, from the surface flow, the water passing between Bagdad sump from January through December, and plot that on the chart?      A. Yes, sir.

Q. That is the——

A. That is the stream flow.

Q. That shows surface flow?

A. The surface flow of the Burro Creek in acre feet per month.

Q. Then did you take your figure as to the sub-surface flow, and chart that on there, and indicate that by Subsurface Flow?

(Testimony of Heinrich J. Thiele.)

A. Yes, sir. I added to this some 30 acre feet of subsurface flow per month.

Q. And then did you add to that the amount of water which the record shows Bagdad pumped in that period?

A. I added to this figure the amount of [93] water pumped by the Bagdad Copper Company with 94 acre feet a month, with the exception of June, where there was a shortage of water, only about 70, between 65 and 70 acre feet.

Q. The total of the subsurface flow—the total of the surface and subsurface flow in the Bagdad is indicated by the use of the words Total Discharge?

A. Total discharge in ground water, surface water, and pump water.

Q. Then did you and Mr. Fletcher prepare the blue line on here which shows the probable—which shows the amount of water which would be lost if there was ample water at all times?

A. Yes, sir. This is the evapotranspiration.

Q. Evapotranspiration, that means the combined loss in transpiration by foliage, and by evaporation?

A. By evaporation and transpiration.

Q. You call that generally evapotranspiration?

A. It is the amount of water plotted on the chart as a potential that would be evaporating when it would be there.

Q. May I express it this way, Doctor. That [94] you have termed it potential because in your judgment there is a substantial period of the year when

(Testimony of Heinrich J. Thiele.)

water is not lost through evaporation, because it is not there?      A. Yes.

Mr. Wilmer: May the record show I have been referring to Defendant's Exhibit Y for identification.

Q. (By Mr. Wilmer): Now, this dotted red line, Pan Evaporation, which goes up off the chart, and then comes back on the chart, in October, or between August and September that represents the curve of the evaporation with respect to the months of the year?

A. And of an open water surface as we have it in the southern part of the basin.

Q. So that in June the rate has risen so high with respect to the average annual that it leaves the chart, is that right?

A. Yes. The numbers are written on this chart for June.

Q. Now, on this brown line here you have plotted the average rainfall for December, just to show the way the fluctuation occurs?      A. Yes.

Q. Now, the subsurface flow which—or the [95] surface flow, rather, which you have testified to, beginning in January at approximately 760 acre feet, is that right? You have your computation?

A. I think I have the computations to give them in detail. I am giving the stream flow in acre feet for the different months of 1953.

Q. Just to have the record clear, Doctor, that is taken computed on the gauge readings, and with the application of the U. S. Geological Survey to

(Testimony of Heinrich J. Thiele.)

that reading?           A. It is.

Q. Then you have an average stream flow in January——           A. In January of 763 acre feet.

Q. All right, that falls in February to what?

A. To 597 acre feet.

Q. It raises in March?

A. In March to 662 acre feet.

Q. And April?           A. April, 596.

Q. May?           A. May, 468.

Q. June?           A. June, 196.

Q. July?           A. July, 412. [96]

Q. August?           A. August, 749.

Q. September?           A. September, 282.

Q. October?           A. October, 261.

Q. November?           A. November, 829.

Q. And December?           A. December, 606.

Q. It just follows the stream flow like this? (Indicating on chart.)

A. Yes. I can correct my figure I gave for the discharge by the Bagdad Copper plant in June. It is 69 acre feet in June.

Q. That is the amount taken in June?

A. Taken in June. I gave it between 65 and 70 acre feet.

Q. You have added to your surface flow your estimated underground flow, which remains constant throughout the year?           A. Yes, sir.

Q. And therefore follows the green line?

A. The green line.

Q. Then you have added to that the total amount which would be in the river when there were [97]

(Testimony of Heinrich J. Thiele.)

periods of water if Bagdad was not operating at all?      A. Yes, sir.

Q. Which would show that in January there would be——

A. 94 acre feet, in addition to the other ones.

Q. Yes. That followed down exactly like this?

A. Yes.

Q. Now, Doctor, the evaporation, or the evapotranspiration curve begins at this point in January, is that correct?      A. With 53.8 acre feet.

Q. 53.8 acre feet in the entire basin?

A. In the entire basin, of 14 hundred——

Q. A period of from here down to here? (Indicating on chart.)      A. Yes. 1456.5 acres.

Q. In that month it indicates a loss of——

A. 53.3 acre feet.

Q. Which in February rises to——

A. 63.4.

Q. And March?      A. 142 acre feet.

Q. In April?      A. 260 acre feet. [98]

Q. May?      A. 583.

Q. Doctor, at this point here where the blue line crosses the total amount in the river, in other words, at that point in between April and May you have a——      A. A balanced situation.

Q. A balanced situation?      A. Yes.

Q. Where there is the stream flow plus Bagdad use, underground and surface equals the——

A. Evapotranspiration.

Q. The loss from evaporation and transpiration?

A. Yes.



(Testimony of Heinrich J. Thiele.)

Q. Now, will you step here to the board, Doctor, and tell me, based on the chart, approximately how many days occur, or pass from the point the ascending curve of the evapotranspiration crosses the total subsurface and surface flow, to the point where it crosses the total flow, including Bagdad; how many days does that indicate?

A. This happens within one or two weeks.

Q. At the most, one or two weeks?

A. Yes, sir.

Q. And then in this period up to here, there [99] is far less water in the river than the amount of evaporation and transpiration?

A. Yes, according to this chart, we have in June, 1953, in the river 196 acre feet, and when we add to this figure the discharge and the subsurface flow—the discharge was 69 acre feet, and the subsurface flow was 30 acre feet, we have a total of 295 acre feet.

When we look at this chart, we see that we have an evaporation of 691 acre feet. That gives 396 acre feet that are not available. It means when you would have 396 acre feet more water flowing in the creek, it would be evaporated.

Q. May I express it this way correctly, Doctor, that after this point (indicating on chart), or, rather, after this point, if Bagdad quit pumping entirely, there would be a short period, depending on how many days that takes that curve to get up there when there would be still a discharge from the river down below?

A. That is true.

(Testimony of Heinrich J. Thiele.)

Q. When you pass this point here, if you add what Bagdad has taken as 69 feet, it simply goes off in the air?

A. That is true.

Q. And that would continue until the point [100] where those curves drop down?

A. To where your evaporation curve drops down here.

Q. Is that an unusual condition in these wasting streams of the west, Doctor?

A. No, this is usual. This is usual procedure. And the peaks sticking out are caused by the summer floods, but usually we have this drop of the surface flow and the rise of the evaporation.

Mr. Fletcher will tell you more about this.

Q. The peak that is indicated there of the summer floods, the red line where it goes up, is that of a lasting consequence in the river, or is it transitory?

A. That is transitory.

Q. Why?

A. Because it is just caused by a short period of rainfall where the evaporation takes care of it nearly completely.

Q. If you look at the rainfall charts that have been introduced, Doctor, referring to the one which shows the daily chart readings.

A. We see here, on Evidence V, that in June—starting with May of the years from 1935, we have a shortage in rainfall in May and June, that is [101] pointed out by this deep surface water flow, and again a second shortage in the months of Oc-

(Testimony of Heinrich J. Thiele.)

tober and November, as we see very easily on this chart again.

This is the usual way with the stream flow curves in the southwest part. And this evidence shows this line with blue, the month where we are short in rainfall, with none, or only a trace of rainfall.

Q. Doctor, the effect of these summer rains, from the standpoint of recharging the basin, and building up a sustained flow, unless they are of a considerable duration, they have little effect upon your sustained stream flow, is that correct?

A. That is correct, because the permeability of the ground allows only a certain amount of water to enter the ground.

Q. I believe you have stated, Doctor, you have been studying this thing since February 18, approximately?

A. Yes, sir.

Q. In the course of which time you have studied many records with respect to the condition of Burro Creek?

A. Yes, sir.

Q. Will you tell us what is your considered [102] judgment as to whether or not, in the normal summer periods of normal summer rainfall, Burro Creek would, if Bagdad pumped no water at all, have a flowing stream at Mr. Zannaras' point of diversion?

A. No. It would be without any effect, because we see that the evaporation, the excess of evapotranspiration of 300 and 400 acre feet would take care completely of the amount of water pumped by Bagdad Corporation.

(Testimony of Heinrich J. Thiele.)

Q. In your judgment, Doctor, from your study of the basin there, the type of materials that are indicated as in that basin, in your opinion, is there any loss of water into that basin, in the sense of seepage into it, and following the old channel?

A. Yes, there is a certain loss, because of the observation made in the same strata in Big Sandy Valley.

Q. Generally, would you say it would be your opinion that the old valley through which, over which, rather, Burro Creek flows, would operate as an underground stream carrying off some of that water also?

A. It is a natural occurrence that the underground water flow follows the old stream channels. And we have found definite evidence in the Phoenix [103] area where the subsurface flow of the Salt River is not going over Phoenix, but is going over Mesa in a southern direction. And the same thing probably occurs here, where the underground water flow is following the old channel in the southwestern direction.

Q. Well, now, Doctor, I believe you have testified that in your opinion, based on your studies and those of Mr. Fletcher, there is a monthly water loss from the Bagdad sump to the Zannaras point of diversion of approximately a thousand acre feet?

A. In June?

Q. Yes, in June.

A. In June, when we assume a yearly evaporation of 60 inches, this figure given here is more



(Testimony of Heinrich J. Thiele.)

conservative. It is only 37 inches. We know that it is conservative. It is based on data from Bagdad, from the weather station at Bagdad, at an elevation that is more than 15 hundred feet higher than the Burro Creek basin.

Q. Let me see if I understood you.

This blue line on the chart which represents the evapotranspiration curve is based on a 37-inch——

A. A 37-inch basis, because we have actual data only on the station in Bagdad available. [104]

Q. So that that curve is based not on 60 inches, but 37 inches annually?

A. This is based on 37 inches. (Indicating) This is based on 75. (Indicating on chart.)

Q. 75?

A. 75 inches. And in between these two curves we have the real evapotranspiration. It is in between these two curves.

Q. Then it would be your opinion, Doctor, that the evapotranspiration potential as shown by that curve is actually underneath what it actually is?

A. Yes, it is underneath. We know that.

Q. Then, Doctor, starting, or assuming that basis, you would have to have a pretty substantial amount of river water put into the river at the top of that basin to have any come out the bottom in substantial quantities?

A. Yes, you have to.

Q. One further thing I would like to ask you with respect to, Doctor.

You computed, I believe, the general dimensions of the river channel at the Zannaras mill?



(Testimony of Heinrich J. Thiele.)

A. Yes.

Q. You gave us the approximate width and the approximate depth of the gravels as you ascertained [105] them? A. Yes.

Q. In your opinion, Doctor, is there any substantial amount of waters in the underground gravels at Mr. Zannaras point of diversion?

A. Yes, there is a certain storage of ground water at the diversion point of Mr. Zannaras.

Q. Is there any way of computing the amount of underground movement of water at Mr. Zannaras' place, within any reason?

A. Yes, we can calculate this figure very easily the same way as we would calculate the other figure here. We know the slope of the water table, and we can assume a certain permeability of the material the same way as it is here.

Q. Did you examine the installation there at Mr. Zannaras' mill? A. I did.

Q. In your opinion, would it be entirely feasible to construct an underground perforated pipe installation there at bedrock which would catch all of the underground movement? A. It would.

Q. Which would be safe from floods and everything else? A. Yes, sir, it would. [106]

Mr. Wilmer: Cross-examine.

The Court: We will have our afternoon recess.

(Recess.)

The Court: Proceed.

(Testimony of Heinrich J. Thiele.)

### Cross-Examination

By Mr. Morgan:

Q. Dr. Thiele, when you first took the stand, because the acoustics are bad here, I couldn't understand everything you said, so I would like to come back very briefly and ask you a few questions.

I thought you stated you first came to the United States in 1937, is that correct?

A. 1936, the first time.

Q. In 1936. And you did some work in the United States. Was that scholastic work?

A. I was a student at that time.

Q. Then I believe you stated you returned to Germany?

A. Yes, sir.

Q. When did you return to Germany?

A. In 1938.

Q. In 1938?

A. Yes.

Q. And you remained in Germany, I take it, until after the war?

A. Yes, sir. [107]

Q. And while you were in Germany, you were engaged on water problems, as I understood it, largely?

A. Yes, sir, largely water problems, yes, sir.

Q. Then later on, after the war was over, you came to the United States?

A. I returned to the United States in December, 1952.

Q. 1952?

A. Yes, sir.

Q. I take it, then, you are not a citizen of the United States?

(Testimony of Heinrich J. Thiele.)

A. No, I took out my first papers.

Q. I think you stated you were a mining engineer, had a degree in mining engineering?

A. I got my degrees in mining engineering.

Q. And also a geologist? A. Yes.

Q. Do you reside now in Arizona?

A. Yes, sir.

Q. Do you have a permanent residence in Arizona? A. Yes, sir.

Q. I presume you are registered, then, as a mining engineer, are you?

A. I am registered as a civil engineer. [108]

Q. You are registered as a civil engineer?

A. Yes, because this type of ground water work doesn't go in mining engineering.

Q. Sir?

A. I am registered as a civil engineer.

Q. In Arizona? A. In Arizona.

Q. By the way, were you employed, or are you employed by the Bagdad Copper Corporation in connection with its dam proposition, and the building and construction of a large dam?

A. I am employed by the Bagdad Copper Corporation in checking the ground water conditions of that area.

Q. All through that area?

A. All through that area.

Q. In other words, you have done work for the Bagdad before you undertook this particular job, is that correct?

(Testimony of Heinrich J. Thiele.)

A. No. I was consulted by the Bagdad Copper Corporation in this special case, but in a general way, that I may give evidence for other things.

Q. All right. Now, you mentioned, I think, in your testimony, this mountain that lies to the east of the river, of the Burro Creek, rather, and which the Burro Creek crosses not far from the [109] Zannaras point of diversion, was rising?

A. Yes, we have a rising area there.

Q. Could you give us any idea how much it is rising, the rate of rising?

A. I don't believe that any geologist in the state could give you an idea on that.

Q. Then I take it you don't know whether it is rising at the rate of, we will say, one inch in a year, two inches?      A. This is insubstantial.

Q. Anyhow, if it is rising, it is imperceptible, is that correct?

A. We see only the rising condition by the outcropping bedrock and the shallow layer of gravels. When we would have stable conditions, we would have a much thicker gravel sheet. We wouldn't observe every year again outcropping bedrock.

Q. As far as you know, I take it it might be a hundred years before this rising would in any way affect the water running down Burro Creek?

A. That is true.

Q. Sir?

A. We don't know anything about the amount of rising.

(Testimony of Heinrich J. Thiele.)

Q. You mentioned in your opening testimony that you had examined some drill cores? [110]

A. Yes, sir.

Q. From what point on the river or the creek did those drill cores come?

A. These drill cores came out of the region northeast of Goble's farm.

Q. Could you point out on the map? I didn't understand your answer.

A. Northeast of Goble's farm. (Indicating on chart.)

Q. Would that be above or below the Bagdad point of diversion?

A. This is below the Bagdad point of diversion.

Q. And was it in the creek bed?

A. It was in the creek bed, and on the sides of the creek bed, on the mountain sides crossing the whole valley.

Q. Do you know how many holes were drilled, and what depth they were drilled?

A. These holes were drilled up to bedrock.

Q. Do you know how many feet they went down to reach bedrock?

A. Yes, I have a picture on that, but——

Q. Well, do you know?

A. Is this necessary for the court case?

Q. You can remember, can't you?

A. Yes, I can remember. [111]

Q. All right, how many feet did these drill holes go down?



(Testimony of Heinrich J. Thiele.)

A. These drill holes went down from a hundred to nearly 400 feet.

Q. From east to west across the bed of the creek?

A. Yes, sir.

Q. How far apart?

A. Some were only 20, 30 feet apart. Others were up to 300 feet.

Q. After you got through the top portion of the territory there, by that I mean the sand and gravel deposit that covers the stream bed, are you able to tell the Court what character of rock was encountered?

A. Yes, sir.

Q. In those cores?

A. Yes, sir. We had a cover of gravels and clay gravels up to a thickness of 90 feet, and below that we had cemented material, this, what is called here in a cross-section, the fanglomerate-breccia. And on the bottom we came on to diorite.

Q. In other words, then, the sand and gravel is this 40 foot section that appears on the map or plat that I am pointing to now.

I don't know what the exhibit is. Could [112] you tell me?

The Clerk: Exhibit R.

Q. (By Mr. Morgan): On Exhibit R, is that correct?

A. That is correct.

Q. And the matter below that consists of clay, you say?

A. No, of gravels and clayey gravels.

(Testimony of Heinrich J. Thiele.)

Q. Was it a uniform depth across there, or was it deeper in one place than the other?

A. It was deeper in one place than the other.

Q. That is, when you got in the center of the channel it would be deeper, I presume?

A. If you come to the center of the channel, of an older channel, it is deeper.

Q. Did I understand you to say that the average width of this stream bed—when I say the stream bed I mean the part in which water, if there were water coming down, would cover it?

A. Yes, sir.

Q. Was about 200 feet wide?

A. 200 feet at this channel wide between here and here. 30 stations—215 feet exactly is the average width between the one station and the point where the creek is entering bedrock.

Mr. Wilmer: May the record, to clarify [113] that, show that the witness pointed——

Mr. Morgan: Below the Kingman Crossing.

Mr. Wilmer: And down to Mr. Zannaras' mill.

Mr. Morgan: Yes.

Q. (By Mr. Morgan): That would be 215 feet wide?

A. 215 feet exactly is the average width.

Q. And above the average width, which I presume would be covered with sands and gravels——

A. Yes, sir.

Q. Would average about how many feet in width? A. I have to measure it.

Q. Well, just approximately?

(Testimony of Heinrich J. Thiele.)

A. 2,000 feet.

Q. Now, would this whole 2,000 feet, in season when water came down, would that be covered with water, or would it carry water, or would only a small portion of it carry water?

A. We brought into evidence several cross-sections through this valley where you see exactly which part of the valley would be covered by water. (Indicating on chart.) You see the different elevation here.

Q. I don't want to be technical, Doctor, but I would like to have it in the record. Could you [114] tell us approximately how much, what part in width, average width would carry water on the surface. That depends on the time of the year and the size of the flow, doesn't it?

A. It depends on the strength of the flow.

Q. The average flow that would go down?

A. Average surface water flow is taking—it is hard to answer this question, because the southern part of the valley here is flooded far over at this time, so I cannot give you an answer on this question for the average conditions of the average year.

Q. Well, let me ask you this question, then. How much a part of this yellow zone that you say is 2,000 feet wide would be saturated with water, or carry any underflow?

A. The whole zone is fairly saturated with water when you are on a bank. That is 8 feet above the river level, that is, Station No. 17. And a little lower down, this station is situated, oh, about 150 feet

(Testimony of Heinrich J. Thiele.)

away from the river, and 8 feet above the river level. (Indicating on chart.) And you have boulders. And the next is sand. Then you just take your foot and scrape away a little bit of soil, moist soil. You see the degree of evaporation when you take a look into the soil. [115]

Q. All right, and would this flow be 200 feet across, 500 feet across? I mean, saturated, or would it be saturated for less distance?

A. The water table is near the surface in this area here, at least 500 feet.

Q. About 500 feet?

A. At least. I don't know it exactly. We have the cross-section for these different points, and if it is necessary, I am willing to study these points more clearly if you have a special point.

Q. What I am trying to get at is this. I understood from your computation that you took into consideration the width of this water-carrying body above the Kingman Crossing? A. Yes, sir.

Q. I thought you said you figured it 200 feet in width and 15 feet in depth?

A. Below the Kingman Crossing I figured 215 feet in width.

Q. What did you figure it above there?

A. Above there the area was calculated with the planimeter. Mr. Colville and I independently calculated the area with the planimeter.

Q. Can you give us some idea, then, about what the particular acreage of ground would be actually saturated with water, or would carry water? [116]



(Testimony of Heinrich J. Thiele.)

A. The whole width of water, of the valley.

Q. As shown on that chart?

A. As shown in this picture, because this picture is carrying water at a certain depth.

Q. Now, I presume that out towards the edges of this deposit that the depth wouldn't exceed a few inches, and then get deeper as it goes in, is that right?

A. That is right. Therefore, we have in another part of the valley the depth, or the thickness of 40 feet, while they are moving out to the edges of the valley to zero.

Q. You average the actual depth, then, as what? 40 feet?

A. No, we were very conservative. We averaged the thickness of the water carrying material only as ten feet.

Q. Ten feet?

A. Ten feet. We were very conservative.

Q. Now, then, you didn't take into consideration anything below this surface, this water-carrying surface as carrying water, did you?

A. No, we didn't take anything into consideration related to this picture. That is Evidence Y.

Q. The reason for that, I presume, is you [117] don't know——

A. We don't know.

Q. Whether that is——

A. We see only directly.

Q. Whether that is a water-carrying earth or not?

A. We know it had a certain permeability, but



(Testimony of Heinrich J. Thiele.)

we don't know the amount. We know we have the loss here. We see the water disappearing directly into the gravels, but we can't give any details.

Q. I presume your testimony would be the same with respect to this old channel that once cut across the mountains to the southwest?

A. That is the old channel I am talking about.

Q. This one is the old channel, is it?

A. This is the old channel, yes.

Q. On R?

A. This is the old channel on R that has been undercrossing today's valley.

Q. That is shown in R?

A. That is shown in R as the old channel, a cross-section through the old channel.

Q. The new channel doesn't have that depth, is that correct?

A. The new channel is only that part, the new channel is cut into this material that is rising [118] on the sides. (Indicating.)

Q. I see.

A. Up to a thousand—well, about. The mesas are a thousand feet higher than the river. Three or four thousand feet, yes.

Q. Do you have any idea what the original width of this old channel was at the surface?

A. Oh, yes. We have here the mountain range coming up, and on the other side we see them crossing out here. We have this width at the surface that was filled up higher than this. (Indicating on chart).

(Testimony of Heinrich J. Thiele.)

Q. Do you have any idea what the width would be at 1,200 feet, we will say?

A. You can calculate it out of this cross-section. One square is 2,500 feet wide. Two squares 5,000 feet. This whole channel is at the bottom here about 5,000 feet wide.

Q. You mean this is not a picture, not an illustration of the channel on its course, but a cross-section?

A. Yes, sir. It was going this way. (Indicating.)

Q. I see. Now, let us for a minute discuss this matter of evaporation. Of course, you have to have water before you can have evaporation, is that [119] correct?

A. Yes, sir.

Q. Now, if no water passes the Bagdad point of diversion——

A. Yes, sir.

Q. We will say beginning about the first of May, or the first of April, assume that no water passes, then the only water that could be evaporated would be the water that was stored in this lower section, is that correct?

A. We can take that from Evidence X. We see here that in June, 1950—in June, 1951, no water was passing the Bagdad diversion point.

Q. Just sit down. I believe you stated that you have heard that there was a great deal of underground water passing that diversion point?

A. 30 acre feet a month.

Q. How did you come to that conclusion?

A. I gave the calculation of this table.

Q. Did you see a large excavation in the creek bed there that was made by the Bagdad people some

(Testimony of Heinrich J. Thiele.)

time ago in an endeavor to back up that underground flow of water below their point of diversion?

A. No, but we made a test hole there to find out about the gravel condition.

Q. Where was the, or what was the nature [120] of that test hole? A. I was told about this.

Q. I see. You made no test, then, to determine?

A. I didn't make any tests at the point myself.

Q. Then you don't know, I presume, from your own knowledge, whether or not any water passes down the creek beyond the point of diversion of the Bagdad underground or surface?

A. Underground or surface, we have a certain flow, because I made 65 resistivity test stations, and the thickness of the gravel sheet, even, related to sea level, and with that I have a certain picture of the flow conditions along the Burro Creek.

Q. At this particular point where Bagdad is taking out its water at its diversion point?

A. Yes.

Q. It is right on bedrock, isn't it?

A. Only on one side. I have been flying over this area very carefully again yesterday to take a better view above the diversion point of Bagdad Corporation, and I have seen very carefully, I have looked into this very carefully, and I have seen that we have a certain gravel sheet.

Q. At this point of diversion, did you make [121] any determinations in order to find out whether or not water was actually flowing underground alongside the, we will say alongside the Bagdad point of diversion?

(Testimony of Heinrich J. Thiele.)

A. I didn't make any geophysical study of it, but I made a study in looking at the area.

Q. But below the point of diversion you made a geophysical study?

A. Below the point of diversion I made a geophysical study.

Q. And while you were making that study during February, from February 18th to the present time, there is a very large amount of water running out of this sump?

A. It is a considerable amount of water that is running out of the sump.

Q. Could you tell us from the records you have before you the amount of water that is running out there, or do you have the records for that time?

A. Excuse me, please. I am looking for this yellow sheet. I am giving you comparable values for February, 1950, 1951.

Q. No, I am interested in 1954, if you have them?

A. I don't have the figures calculated for 1954. [122]

Q. Well, to the best of your judgment, how much water was passing the Bagdad sump at the time you made all these experiments and calculations?

A. I didn't get your question.

Q. How much water—I am not trying to trick you at all—how much water was flowing out of the Bagdad sump?

A. I didn't calculate it, because it isn't essential right now.



(Testimony of Heinrich J. Thiele.)

Q. Could you give us some idea whether it was a large flow or a small flow?

A. It was a comparatively large flow.

Q. Yes. And it ran down to this territory which is shown on the plat in yellow, is that correct?

A. Yes, sir.

Q. And it continued to run right down on past the Zannaras point of diversion?

A. That is true.

Q. All of this country, of course, was then saturated, that is, the surface, at least, down to a certain depth, was saturated with water?

A. That is true, to a certain depth it was saturated with water.

Q. All right. Now, to get back to this question of evaporation. Is there any difference in [123] evaporation of surface water and ground water?

A. Yes, sir, there is a difference, and you see the difference in these two curves I plotted on this chart. This is an evaporation of surface water, and this is the evaporation from a ground surface of the ground water.

Q. I am sorry. I can't see the plats. My eyes are very bad. If you will tell us about that. As I understand it, surface water, where the sun can get to it, it will evaporate very rapidly, will it not?

A. Relatively, yes.

Q. Isn't that correct?                      A. Yes.

Q. Underground water is not so susceptible to evaporation for what reason?

A. Underground water is susceptible to evapo-



(Testimony of Heinrich J. Thiele.)

ration, when you have a large surface, a large evaporation surface. When you have trees which have leaves, the water comes to the surface and it increases the evaporation, or the transpiration.

Q. I believe that is called aspiration, isn't it?

A. Transpiration.

Q. Transpiration, thank you. But those trees, of course, afford shade in summer? [124]

A. Nevertheless, they are using a tremendous amount of water, and we have evidence on the amount of water one cottonwood is using.

Q. But they do have shade there that tended to cut down the actual evaporation, isn't that right?

A. No. They didn't increase the—they decrease the evaporation, yes, but they increase the transpiration.

Q. That may be true.

Now, then, if the stream bed itself becomes denuded of water, and there is no water on the surface, and the surface becomes covered with dust and loose dirt, would that make any difference in the evaporation of the waters that were flowing beneath the surface?

A. When this sheet of clay, as you call it, as you may call it, is getting thicker than two or three feet, it naturally makes a difference, especially when it is drying out. But we don't have these conditions here. We don't have a clay cover. We have at least a sandy silt at certain places, and I had my trouble with this sandy silt. I hoped it was thicker. When I tried to sink my stakes in it, at a depth of three or four

(Testimony of Heinrich J. Thiele.)

inches I couldn't get hold any more, because there were big cobbles and stones. [125]

Q. You have heard of dry farming, haven't you? Dry farming?

A. I don't know this expression.

Q. That is where a man goes out and irrigates a field, then immediately, as soon as he can do so, he cultivates and mulches up the soil on top, and as long as that soil is loose, it will prevent the water from evaporating, and for a long time it cuts the evaporation, in other words. You know that, don't you, because it breaks up the capillary action of the surface?

A. The electric capillary action of the soil is given by the chemistry of the ground water, and especially by the chemistry of the interstitial water. I studied electrochemistry in college, and got my Master's thesis on the electrochemical question.

Q. Assume, in answer to this question, that in the summertime, in the dry seasons when there is no rainfall up in that section, the surface of the Burro Creek, and that part of the surface which is designated here particularly as in yellow, becomes dry?

A. Yes, sir.

Q. The silt is dry and covers the surface maybe to a depth of two or three, or several inches, [126] wouldn't that tend to prevent evaporation, cut down evaporation?

A. Scarcely, because I observed not only in this area that we have a high conductivity in this surface layer. It would cut it down only to a very,

(Testimony of Heinrich J. Thiele.)

very small amount, but we still have a high evaporation because of the difference in electrical potential of the air and the soil.

Q. Would it be your idea, then, that even if Bagdad was not pumping, and the usual amount of water came in here in the dry season, according to the charts, that all this water would be used up, or practically all, before it got down to the Kingman Crossing?

A. Yes, it would be used up in the dry summer.

Q. It would be used up before it got to Kingman Crossing?      A. Yes, sir.

Q. That is your opinion, then?

A. But we have a certain flow, when you put water into the ground, where it takes a long time, maybe several years to reach Kingman Crossing point. It means when you have a dry summertime, you have still rising ground water here, because that water that is starting to move here starts to flow very slow, very slowly. [127]

Q. Let me ask you this question. See if we can change your opinion.

If the evidence showed, or you knew from competent evidence that in all the years that this Kingman Crossing has existed, that in all the years, both before pumping operations by the Bagdad, and up to its present point of diversion, and at the present time, there has always been water, even in the driest seasons running down at the Kingman Crossing?

A. Yes. We don't have a surface flow any more,

(Testimony of Heinrich J. Thiele.)

but we have returning ground water there. You have to think that our water table is in Bogle's Farm 150 inches higher than at Kingman Crossing. This causes, naturally, a pressure and outgoing ground water at that point.

Q. Do you know from what source Burro Creek gets its main supply of water?

A. It has an intake area extending in a north-eastern, northern direction.

Q. Do you know to what mountains?

A. I don't know the names of the mountains of the area, but I have a map with me where we can see the surrounding area, if you want to have a certain picture.

Q. I presume you know it doesn't get [128] much flow from Boulder Creek, that is the creek that runs by the Bagdad?

A. The Boulder Creek is giving only a certain amount.

Q. Its main supply is far up the mountains?

A. Yes, sir.

Q. I don't suppose you ever studied the rainfall records at the source, showing the rainfall at the source of Bagdad, at the creek?

A. I have only the rainfall records of Bagdad itself. There were not many records in this part of the country, as you know.

Q. I am not sure that I understood you. Did I understand you to say that it would pass through a cubic foot—is it a cubic foot—of this sand and gravel, a certain amount of water per day?

A. Yes, sir.



(Testimony of Heinrich J. Thiele.)

Q. Could you give me that figure again? I don't think I understood it.

A. One coefficient is defined by Meinzer as the rate of flow of water in gallons per day through a cross section of area of one square foot.

Q. Square foot, yes. I didn't get that clear. Let me see if I can understand it.

Say you take a square foot. Assume, now, that there is a square foot of earth? [129] A. Yes.

Q. Now, in one day—and it was existing up there on this Burro Creek near the surface, I presume? A. Yes, sir.

Q. In one day, how many gallons of water would flow through that square foot, in one day?

A. That is another one. This is another question, that is, the seepage loss out of the Burro Creek?

Q. No, no.

A. Do you think of a vertical or horizontal movement?

Q. Horizontal movement.

A. Horizontal movement.

Q. And the permeability of it.

A. (The witness handed a document to counsel.)

Q. I can't read it. Tell me.

A. I wanted to show you a picture that explains these things in this chart here, showing the movement of the water through one square foot, one foot in length, one foot high, when the drop of the water table is one foot in one mile, one mile difference.

Q. Now, Doctor, how many gallons, how many



(Testimony of Heinrich J. Thiele.)

gallons would flow through a square foot of [130] this soil, taking into consideration the fall of the ground, and all of that?      A. Yes.

Q. How many gallons percolate through underground flow?

A. It depends on the slope of the water table.

Q. You have already testified to it, but I didn't get it clear.

A. I testified that the slope of the water table is 185 feet in three miles, and we brought this down to the figure of one hundredth, or one per cent slope of the water table.

Q. Then from that you calculated that water coming in here, we will say, at the upper end of the valley, or the deposit coming down, would percolate or pass through a square foot of soil?

A. The amount of water passing through a square foot of soil, according to the figure——

Q. That is what I am trying to get here.

A. ——at the table here would be 10,000 divided by a hundred, would be 100 gallons a day. (Indicating on chart.)

Q. 100 gallons per day?

A. Yes. We have here an area of 200 feet wide and 15 feet high, and you are asking for one square foot? [131]

Q. Yes.

A. You have to cut this out and take this as one here. Then we have only 10,000 divided by a hundred leaves only a hundred.

Q. 100 gallons a day?

(Testimony of Heinrich J. Thiele.)

A. Through one square foot.

Q. Then if it was 100,000 square feet?

A. You have to multiply by 100,000.

Q. That would be how many gallons a day?

A. A hundred thousand times 100 is ten million.

Q. Ten million gallons a day? A. Yes.

Q. And you don't mean by that that that is—well, I think that is understandable now.

On that soil, how much, assuming that we had a square foot of that soil, how much water would be contained in a square foot of that soil at any one time?

A. In these gravels will be contained, oh, about 23, 22, 23 per cent of water, and it will give free about 20 per cent. 20 per cent, it means the effective porosity is 20 per cent, while the total porosity is 33 per cent.

Q. In other words, if this entire deposit was all saturated with water at one time, the water [132] would be 20 per cent of the total—

A. The free moving ground water you can assume is 20 per cent of the total amount of the soil.

Q. Yes. And how much would that be in acre feet at one time?

A. It depends on the cross section. I can make a calculation on that.

Q. All right. Have you calculated it?

A. When you have that slope of the water table as we have above, it would be 2,000,000 gallons a day, but don't forget that this ground water is

(Testimony of Heinrich J. Thiele.)

dammed up in the southern end, and by the damming up we don't have the slope of the water table any more. We don't calculate with such a high slope.

Q. What I am trying to find out, really, is this. Assume for this question that all water is stopped from flowing down the creek at the narrowest point of diversion. By that I mean not only surface water, but underground water.

How long, or how many gallons would it take to fill this up again, or how many feet would be required to fill this deposit of water-carrying soil?

Mr. Wilmer: Are you assuming that it is completely denuded of water? [133]

Mr. Morgan: Yes.

Mr. Wilmer: Or just dry to bedrock.

The Witness: We can calculate the amount of water that is stored in this basin in the gravel sheet.

Q. (By Mr. Morgan): Just approximately?

A. Let us assume that you have—maybe you have ten feet. Then when we assume only a ten-foot layer—

Q. Yes?

A. Then we have approximately 4,000 acre feet.

Q. Yes. To refill it?

A. But these actions, as I pointed out, these actions are cutting one another. You have evaporation occurring in one area when you have refilling. You have the effect of evaporation in one area, when already the effect of refilling starts in the

(Testimony of Heinrich J. Thiele.)

other one, caused by the slow movement of ground water.

Q. Are you familiar with the lake Bagdad keeps up near its mill?

A. I am not familiar with it.

Q. You have seen it, haven't you?

A. I have seen it. I enjoyed its beauty. [134]

Q. Do you know how many gallons of water, the minimum gallonage, that is pumped by the Bagdad up to their mill?

A. Yes, the minimum amount of gallons pumped up to the mill is 520 gallons per minute, in June of 1953.

Q. Do you know what that increases to in the wintertime when there is plenty of water?

A. Yes, we have an average figure going from June last year to February of this year, giving a mean average of 707 gallons per minute.

Q. Some of that water is pumped directly into the mill, and some is pumped directly into the lake, I take it?

A. That is not my business. I don't know.

Q. Would you be able to tell us what the evaporation would be on that lake?

A. I didn't calculate the area. I didn't make any calculation.

Q. You said something about the evaporation being——

A. In a pan. That was pan evaporation observation of the Weather Bureau.

Q. That would be 75 inches a year, is that correct?

A. Yes, that is correct. [135]

(Testimony of Heinrich J. Thiele.)

Q. Assume that Bagdad has 100 acres of lake, and that there would be pumped into it each year 600 million gallons of water. I take it that 75 per cent of that would be evaporated into the air?

A. Well, I don't know. We are not so sure about the total amount of evaporation on Lake Mead. We have just in the last years, we have several studies on the action of evaporation, and it figures 20, 25 per cent difference. And never forget that we have not the constant evaporation all year long. We have, as we see, that peak there at one time of the year, and in another time of the year we have a very low evaporation.

Q. Your figures from Roosevelt—I assume that was from the dam, wasn't it—show evaporation?

A. No. It was also pan evaporation.

Q. Is there any difference between pan evaporation and—

A. Between pan and lake evaporation there is a small difference only. I guess it is given in this book here. I have seen it, at least.

“The evaporation data listed in Tables 4 and 5 of Appendix A, and in accompanying Table 1 are recorded and estimated pan evaporation rates.” [136]

This is page 26 of the Lower Colorado River Basin report.

“A conversion factor of 0.70 was applied to these land pan rates to reduce them to free water surface evaporation rates for estimating



(Testimony of Heinrich J. Thiele.)

the evaporation from reservoirs, streams, canals, and all other water surfaces.”

I am informed this figure of 0.70 is just an experience number, and is varying according to varying regions.

Q. Would you say that is a fair average, 75 inches for that country?

A. That would give, when you accept 75 inches, you would have to take 70 per cent of this for the lake.

Q. You are not a mining metallurgist, are you?

A. No, I am not.

Q. You wouldn't know how that water could be saved up there without loss?

A. I didn't try to go into this question.

Q. Well, assume that this lake up there maintained by the Bagdad, which is known as the tailings pond, has 100 acres of surface. Could you tell us just on that basis how much the evaporation would [137] be in a year?

A. I didn't study this question. I couldn't give you any answer.

Q. Can't you figure it out from your general knowledge?

A. No, I don't have any experience on lakes in this area.

Q. Don't you have it right in front of you there in that book that you are referring to?

A. I didn't understand.

Q. Doesn't that book show the evaporation from lakes and ponds?

(Testimony of Heinrich J. Thiele.)

A. As 70 per cent. But this pan is in another altitude. It is not at the lakeside there.

Q. Do you know what the altitude is at Bagdad? You know that, don't you?

A. The altitude at Bagdad is around 3,000, 3,500 feet.

Mr. Wilmer: If it makes any difference, we will agree that it be 70 inches. I don't know what difference it makes.

Mr. Morgan: Well, all right.

Mr. Wilmer: To shorten this up.

Q. (By Mr. Morgan): Now, your opinion to the effect that water, even when all the water was allowed to run [138] down this creek, wouldn't reach the Zannaras point of operation——

A. It could not reach the point——

Q. That is based simply upon your observation since you have been up there?

A. It is based on the figures of the Bagdad Weather Bureau station. It is based on rainfall, and the figures used by the Department of the Interior, the Forest Service, and other services for the calculation on the evaporation.

Q. Well, if the evidence introduced in this case heretofore disclosed without question that up to 1948, and before the Bagdad began its pumping operations from its present intake, that there was always a flow of water winter and summer down to the Zannaras point of diversion, would that change your opinion?

A. Before 1947 we had nearly twice as many in

(Testimony of Heinrich J. Thiele.)

rainfall as we had in the following years. And as I told you, the flow conditions of the ground water are very low, so that you feel the effect of a low rainfall only one year later on the outflow.

Q. Doesn't the plat you introduced in evidence show the two dry years were 1946 and 1947?

A. 1947 and 1948, so far as I can recall. We can look into this Evidence V. [139]

1947 and 1948, those years were abnormally low rainfall.

Q. 1946 was low, too, wasn't it?

A. 1946 had 15.92 inches.

Q. And what was it in 1947? A. 7.9.

Q. And in 1948? A. 9.2.

Q. Now, if the evidence that has heretofore been introduced in this case was before you, and from that evidence it was shown that apparently whenever the Bagdad was allowing 225 gallons of water to go down past its sump, that there was always water at the Zannaras point of diversion, would that make any difference in the opinion you gave here?

A. No, it wouldn't make any difference at all, because this amount of water would be only around 30 acre feet, and 30 acre feet, according to this evidence here, doesn't make any difference. And in the summertime when you have evaporation of 300 or 400 acre feet in addition to that amount you have in the river, it doesn't make any difference at all.

Q. In other words, regardless of what the facts

(Testimony of Heinrich J. Thiele.)

would be, that is, the actual facts as to the [140] history, you would still say, based on the rules and regulations that you are deciding this thing on, that it just couldn't happen?

Mr. Wilmer: If it please the court, we object to counsel assuming something which the record doesn't support. There is no such unity in the rule at all. I object to it on that ground.

The Court: You are arguing with the witness.

Mr. Morgan: I think that is all. Just one more question.

Q. (By Mr. Morgan): Going back to this evaporation at the tailings point. As I understand, that is a 100-acre pond, 100 acres of surface. Wouldn't you be able to figure, assuming that the evaporation was 70 per cent, and taking into consideration the acreage there on the surface, how many gallons would be evaporated off during the year?

A. 70 inches, I said, not 70 per cent.

Mr. Morgan: He said 70 per cent.

Mr. Wilmer: No, he didn't say 70 per cent.

Mr. Morgan: Oh, 70 inches.

The Witness: 75 inches, and 70 per cent of the 75 inches.

Mr. Morgan: Sir?

The Witness: 70 per cent of 75 inches when the [141] lake would be in the altitude of the pan.

Q. (By Mr. Morgan): How many gallons would that amount to in a year?

A. It would be about 450 acre feet total in the year.

(Testimony of Heinrich J. Thiele.)

Q. 250?

A. 450 acre feet as a total in the year.

Q. And I believe there is 325,851 gallons in an acre foot?      A. 325——

Q. 325,851 gallons in an acre foot?

A. That is correct. It is the correct figure.

Q. All right.

A. We are calculating here in acre feet?

Q. Yes.

A. And this whole figure, this whole evaporation would be 450 acre feet over the whole year.

Q. Then how many gallons would that be? If you multiply that by 326, we get the gallons, 326,000.

A. All right.

Q. I can't figure.

A. 352,000, I guess it was, or was it 326?

Q. 326, according to the formula.

A. 326. That would be 146,000,000 gallons in the year.

Mr. Morgan: All right, I think that is all. [142]

### Redirect Examination

By Mr. Wilmer:

Q. I want to ask just a couple of questions, Doctor. From this point here, which is the Bagdad diversion point, approximately, to the Kingman Crossing is how far, do you recall?

A. About four miles.

Q. And from the Kingman Crossing to the Zannaras mill is approximately——



(Testimony of Heinrich J. Thiele.)

A. Three miles.

Q. So altogether, approximately 7 miles?

A. Approximately.

Q. Can you tell me how much higher this point, that is, the surface at this point is than the surface—to get the record straight, how much higher is the surface at the Bagdad sump than it is at the Kingman Crossing?

A. About 400 feet.

Q. How many? A. 400 feet.

Q. Would you have a fall of 400 feet from this point?

A. Approximately.

Q. To the Kingman Crossing? A. Yes.

Q. Now, I believe you have a term you refer [143] to as hydraulic pressure?

A. Yes.

Q. Now, Doctor, assuming for a moment that we shut off all water at the Bagdad sump?

A. Yes.

Q. What effect does the water have which is lying immediately below the Bagdad sump on the water which lies below it in the basin?

A. It is running further on, because you have the pressure on the upper part of the valley in the ground water, so you have an outflow of ground water up to this point, where you have this water table, and where this water table is practically level.

Q. Is there a place where the water table is practically level when the stream is running?

A. Only when this part is dried out here.

Q. In other words, the water level tends to level itself off with the lip of the basin at Kingman Crossing?

A. Yes.

(Testimony of Heinrich J. Thiele.)

Q. And until it levels itself off——

A. It is running.

Q. The water at the upper end tends to push the water down by hydraulic pressure?

A. That is true. [144]

Q. You made some observation, Doctor, with respect to the rate that water moves through gravel such as that. In other words, if I could put a tag on a piece of water that was entering the upper end of the basin, to follow it through the gravels and sand until it leaves the basin, could you testify approximately the length of time involved for that water to move from the upper end to the bottom or the lower end of the basin?

A. We could do that, according to Darcy's law. Well, I can say so much, that the movement of ground water has been rated up to, even through sands, from 60 feet a year up to half a mile a year, depending on the different permeability.

Q. Up to a mile. In other words, from 60 feet a year to a mile a year, depending on the——

A. The permeability of conditions.

Q. Depending on whether the material it is moving through is tightly knit or porous?

A. Yes. There have been made investigations in coloring the water with transfluent media so that people were able to determine the movement exactly in the different pump sites and wells as the water was flowing by.

Q. That, Doctor, being true, then, that is known

(Testimony of Heinrich J. Thiele.)

as Darcy's law, is it, or is that based on [145] experiments?

A. This movement of the ground water is known as Darcy's law.

Q. Then with that being a four-mile area, the ground water, the water which comes into the basin at Point B would be at least two or three years in moving underground to the bottom end of the channel?

A. That is true. But the particle of water itself—you know, when you take a U-shaped valve pipe and put water into this side, it is pressing the water on the other side to the same level, without that particle itself coming up to the level.

Q. In other words, I think I understand what you mean now. When you put in "X" gallons at the upper end——

A. It is pressing——

Q. It is pressing out "X" gallons at the lower end?

A. That is right.

Q. Except that if the "X" gallons you put in at Point B is less than the loss from the surface, then the loss from the surface neutralizes the amount you didn't put in at the other end?

A. Taking into account the friction in the soil as you have it in the pipe. [146]

Q. Yes. What I mean, is this true, Doctor? I may be off base here.

Let's say you put an acre foot of water at Point B in June. If we had no evaporation or no transpiration——

A. That is right.

(Testimony of Heinrich J. Thiele.)

Q. That would result in an acre foot coming out at the bottom of the basin, wouldn't it?

A. Less that amount that is taken care of by the friction.

Q. In other words, the hydraulic pressure which that acre foot exerted at Point B would have to overcome the friction of the sands and gravels to push out an acre foot at the Kingman Crossing?

A. That is correct.

Q. Now, if the acre foot you put in at Point B is less than the amount which the basin is losing through evaporation and traspiration, what effect will that acre foot have at Point B?

A. It presses up the water to a certain point, but it is losing its effect very fast.

Q. Well, then, I take it the explanation, Doctor, for the fact that at Kingman Crossing there is always a flow of water is that the hydraulic pressure, even when the water is shut off at the Point B, or there is very little flow, or an acre [147] foot, as you have said, that nonetheless that storage up there is feeding——

A. Feeding——

Q. Is feeding the water and pressing it out the charge, then, to where, before the effect of the hydraulic pressure is exhausted, there comes the rain, and the dry period ends, and you have a restoration of the channel?

A. Yes.

Q. Or the charge of the basin there?

A. Yes.

Q. Did you compute, Doctor, the amount of storage, assuming there is no permeability in the blue



(Testimony of Heinrich J. Thiele.)

portion of that Exhibit R, the amount of storage in the gravels and sands in the Bagdad basin—I am going to call it the basin—above Burro Creek?

A. We gave the figures before.

Q. I don't know whether we put that in or not.

A. It was exactly about 4,000 acre feet.

Q. You are assuming that there is——

A. Assuming that we have 10 feet.

Q. Ten feet uniform of saturable material in the area from the Bagdad sump to the Kingman Crossing?

A. Yes.

Q. Then did you compute the water storage in [148] the basin lying below the Kingman Crossing and to Mr. Zannaras' point of diversion, as to how much water charge that would hold?

I believe there is 82 point something. 82.4 or 5.

A. 150 million cubic feet.

Q. 150 million cubic feet?

A. 150 million cubic feet.

Q. Can you relate that, now, or translate that, now, to free water?

A. This is the amount of ground water stored between Kingman Crossing and Zannaras station.

We have 15,000 feet of length of the channel, 200 feet of width—exactly 215. And I am taking again 10 feet as the average thickness of the aquifer, and I am taking the same figure as before of 20 per cent of effective porosity.

Q. In other words, 20 per cent of free water?

A. Yes. And this comes to 150 million cubic feet.

Q. All right, now 150 million cubic feet is how



(Testimony of Heinrich J. Thiele.)

many gallons? What I am getting at is there is always water at the Kingman Crossing, I think everyone agrees, which means that this basin below the Kingman Crossing is being supplied with water. Now, how much underground water does that hold? [149]

A. One cubic foot is 7.48 gallons. That gives about 20 million gallons between Kingman Crossing and Zannaras mill.

Q. In the underground gravels and sand?

A. Yes.

Q. 20 million gallons? A. Yes.

Q. In other words at such time as the sands and gravels below the Kingman Crossing are fully charged to the extent they will hold water, and I guess that is a constant figure, isn't it?

A. Yes.

Q. At that time there is then in storage there——

A. It is in storage.

Q. The figure you gave me of——

A. 20 million gallons.

Q. Of 20 million gallons.

How high is the Kingman Crossing above the Zannaras mill? Does it show on this thing here?

A. Yes. We can take it off. About 140 feet.

Q. From the Kingman Crossing? A. Yes.

Q. Then to the Zannaras mill there is a drop of 140 feet? A. Yes. [150]

Q. Now, counsel asked you some time as to the saturation condition of the materials lying in the basin above the Kingman Crossing.

(Testimony of Heinrich J. Thiele.)

Were you able to make any observations, Doctor, in your geophysical work, which would indicate to you whether or not there was a constant moisture from the surface down as you made these various tests, with respect to the resistance of the ground, the conductivity of the ground?

A. I observed by the conductivity of the ground we have a certain percentage of moisture practically starting half a foot or a quarter of a foot below the surface, up to the ground water.

Q. Is it correct that the content, moisture content of the soil has some relationship to the conductivity of the soil through electricity?

A. That is correct. We have even certain compilation curves between moisture content and resistivity.

Q. You made the statement that at one point some 150 feet back from the channel you could by digging down observe a moist condition?

A. Yes, sir.

Q. Did the fact that that condition persisted to the bedrock, was that borne out by the studies, the experiments you made on the reaction of the instrument [151] to the electric charge—to the electricity used?

A. Yes. We could differentiate very good.

Q. Did the results of your studies geophysically substantiate your conclusions that the entire area, or substantially all of it was pretty well permeated with water on the surface?

A. Yes, that is true, even when we take the com-

(Testimony of Heinrich J. Thiele.)

pilation curves for the moisture, between moisture and resistivity, we see that the point has been reached where there is a certain saturation.

That means when you draw up such a curve, looking like this, that you come—when you have your 10 per cent moisture, 10, 20, and so forth, then your values come down maybe from 100,000 ohmmeters steeply down until you come to the wilting point at 6 per cent, and the curve is levelling off at 15 per cent, something like that, or 20 per cent moisture content of the soil.

Q. Which is a high content, is that right?

A. Which is a rather high content and shows we have evaporation there.

The Court: We will suspend at this point until ten o'clock in the morning.

(Thereupon at 4:30 o'clock p.m. an adjournment was taken until 10 a.m. the following morning, March 10, 1954.) [152]

The Court: You may proceed.

#### HEINRICH J. THIELE

resumed the stand and testified further as follows:

#### Redirect Examination

(Continued)

By Mr. Wilmer:

Q. Doctor, you made a calculation yesterday with respect to the amount of water storage in the basin above the Kingman Crossing, and also below the

(Testimony of Heinrich J. Thiele.)

Kingman Crossing?           A. Yes, sir.

Q. Have you had, or have you checked those figures with respect to their accuracy, and made a calculation that you wish to put in the record in place of the one which you made, on the ground that [153] it was inaccurate?           A. I did.

Q. Will you tell us, if you will, please, the calculation with respect to the acre feet of water, storage water, or water other than surplus water, in the basin above the Kingman Crossing?

A. The storage in the upper basin above the Kingman Crossing is 2,700 acre feet.

Q. And below the Kingman Crossing?

A. Below the Kingman Crossing, 150 acre feet. The evapotranspiration of the whole area is 4,600 acre feet. The reduced pan evaporation——

Q. Pardon me just a minute. This figure you gave as the evapotranspiration over the entire period, is over what period of time?

A. It is over one year.

Q. Over a one-year period?

A. Yes. The reduced pan evaporation, according to the Bagdad weather bureau station, would be 5,800 acre feet.

Q. Wait a minute, Doctor. I am not following you. The pan evaporation is higher than the——

A. Is calculated for open water surface.

Q. That is higher than the evapotranspiration, is it not?

A. Yes, it is higher than the evapotranspiration. [154] These figures that they are giving on this

(Testimony of Heinrich J. Thiele.)

chart are for Bagdad. They are smaller than they are, really, in the area under investigation. That means the true evaporation value is between the two lines, between the evapotranspiration line and the pan evaporation line. The pan evaporation times 0.70 gives the evaporation of the open water surface, as given in the publication mentioned yesterday.

Q. I think you must have your figures twisted, then, because you said that the evapotranspiration for the year would be 12 thousand some acre feet, and the open pan would be 5 thousand acre feet. Did you say that?      A. No.

Q. Maybe I didn't hear you right.

A. I don't remember that.

Q. Let's start it over again.

A. The evapotranspiration for the whole year as given in these figures there is 4,600 acre feet in the year.

Q. 4,600 acre feet per year?

A. Yes. And the reduced pan evaporation would be 5,800 acre feet.

Q. Okay.

A. The stream flow of 1953 was 6,400 acre [155] feet.

Q. That 6 thousand——

A. It is the flow at the gauge station, at the diversion point, 6,400 acre feet.

Q. That is surface water?

A. Surface water, and the ground water flow is 360 acre feet. The discharge by Bagdad——



(Testimony of Heinrich J. Thiele.)

Q. By discharge you mean what they take out?

A. What they take out is 1,100 acre feet. And the discharge by Zannaras pump station is about ten acre feet.

Q. I will ask that again. By discharge you mean what is taken out——

A. Discharge is the amount of water that is discharged out of the river.

Q. Taken out of the river?

A. Taken out of the river.

Q. That is transposing the 3 million gallons per year into acre feet?      A. Yes.

Q. Which is approximately ten acre feet?

A. Approximately. It is exactly 3 million divided by 326,000.

Q. And the Bagdad discharge or take-out from the river is computed on what basis?

A. On the measuring values, on the meter [156] reading values.

Q. In other words, the amount, the figures that you have on Bagdad are related to the actual water taken out?      A. Yes.

Q. Or 1,100 acre feet in the year 1953?

A. That is correct.

Q. The Zannaras figures are based on what, under his certificate, he claims he has a right to take out, 3 million acre feet?      A. 3 million gallons.

Q. Three million gallons?

A. That is correct.

Q. Now, one other point I would like to clear up, Doctor, and that is this. Where you have a period

(Testimony of Heinrich J. Thiele.)

of dry weather to where there is no surface flow in the creek at the Bagdad point of diversion, or where the basin begins, what effect will there be on the discharge of water from the basin and at the Kingman Crossing when you have a summer rain which for a time gives you a surface flow?

A. May I make a cross section on the blackboard, please?

Q. Yes.

A. When we assume that this part of the [157] valley between the two points where bedrock crops out up here, and near the Bagdad diversion point, and near the Kingman Crossing, we have the following picture: This is again on a larger scale. This is the surface, and this is bedrock cropping out here, underlaying. This is the gravel sheet, the cemented material, the fanglomerate breccia in here. This is bedrock. (Witness indicated on blackboard.)

Then our water table is in the winter months near the surface, slightly going down at the upper end.

This relationship is constant so long as we have a surface flow. At the moment when the surface flow stops, we have the following condition:

The water that is flowing out at the Kingman Crossing into the creek to the Zannaras pump station is overflowing on this point of the subsurface dam, because of the pressure of this ground water.

The ground water is diverted again into surface water.

Q. Now, Doctor, if I may interrupt you just a minute, because the record won't quite show what

(Testimony of Heinrich J. Thiele.)

you are saying. You are indicating that at the upper end, or at the Bagdad sump, the pressure of that stored water there is pressing downward [158] against the water which is at the lip of the basin at the Kingman Crossing, and forcing that water out there?

A. Yes, it is. Let us assume a certain point in this curve here. (Indicating)

In May we have a discharge here of 500 acre feet. 500 acre feet. Now, let us assume that the surface water flow stops at this point up here.

Q. That is at the Bagdad sump?

A. Near the Bagdad sump.

We have then only the ground water flowing into the creek below the Kingman Crossing. That means with the outflow of the ground water out of this basin, and with the pressure, the amount that can flow out is decreasing.

The water table, this line, that was dropping down slowly, now falls to this point, coming down further and further until it reaches a certain point where, taking the friction and everything into account, there is no longer any outflow out of the basin.

In the meantime, there may come a flood, one of the summer floods in August, and this flood is filling up the basin again to a certain point, but only to a certain point, because of the permeability of the ground. The permeability allows only a certain amount of the flood water to flow [159] into the ground again.

Q. Doctor, when you have a flood that lasts, say,

(Testimony of Heinrich J. Thiele.)

for six hours, or a day, or something like that, does that completely recharge that basin to the impermeable material?

A. No, sir. There is only a very small amount that is flowing into the basin again.

Q. In other words, with respect to recharging the basin, as such, the summer flood has very little effect on it, is that correct?

A. Very little effect.

Q. Why is that again?

A. Because of the permeability of the ground, the permeability of the gravels allows only a certain amount of water to enter in a certain time.

Q. So that actually the water runs over the top without getting back down to fill up the basin again, is that right?

A. It fills up only to a small amount. It doesn't fill up very high, so we have this sharp curve here showing we have a sudden increase of surface flow, and then it is going down right away.

Q. All right, now, go ahead, if you wish.

A. Here we are reaching a certain point of the year, not in every year, only in those years where we have little rainfall, little streamflow, [160] where this ground water is depleted so far it cannot pass any more this underground dam at the Kingman Crossing. In years when we have abundant rainfall we have all the year overwater flowing over this.

Q. When we add some water, assuming your water level in the basin has dropped, you add a certain amount of fresh water at the upper end, at



(Testimony of Heinrich J. Thiele.)

the Bagdad sump, does that have any immediate effect on the outflow of the river at the lower end, or at the Kingman Crossing?

A. No, sir, because it would have to supply that amount that is evaporating at the upper part of the valley. It depends on the amount. When you would have to put into the valley—let us take this point of the curve here—100, 200, 300, 400 additional acre feet of water in order that you have an outflow down here, this amount of water is evaporated in the whole area, and it would have to be more than 400 acre feet in order that it could flow.

Mr. Wilmer: I think that is all.

### Recross-Examination

By Mr. Morgan:

Q. Doctor, you were interrupted so much by counsel that I got all confused on the figures, but [161] am I right that your testimony is that the acre feet of storage water above the underground storage water is 2,700 acre feet?

A. 2,700 acre feet in the upper basin.

Q. 2,700 acre feet that is underground?

A. That is calculated on the area of 1,300, 1,374 acres.

Q. Yes, sir.

A. And with a ten-foot sheet of gravel saturated with water, and an effective porosity of 20 per cent.

Q. Below Kingman Crossing, is it your testimony that there is 150 feet—



(Testimony of Heinrich J. Thiele.)

A. 150 acre feet calculated for a length of the valley of 15,000 feet between Kingman Crossing and Zannaras pump station, the width of the valley of 200 feet, the thickness of the aquifer of 10 feet, and 20 per cent porosity.

Q. Those are scientific calculations?

A. Yes, sir.

Q. Now, Doctor——

A. Based on the actual observations made by geophysical tests and actual borings.

Q. Now, Doctor, you say that during a year this 2,700 acre feet of water will evaporate how many acre feet? [162]

A. Evapotranspiration?

Q. Yes.           A. Is about 4,600 acre feet.

Q. 4,600 acre feet?

A. When the water is available.

Q. When the water is what?

A. When the water is available in the whole area.

Q. That is on the assumption with water running down?

A. Not the river water, the ground water is available in the upper part of the basin. When no ground water is available any more, it cannot evaporate so much.

Q. Below the Kingman Crossing, what did you figure the area of evaporation?

A. This takes into account the area below the Kingman Crossing, but we can divide it up.

(Testimony of Heinrich J. Thiele.)

Q. All right. Now, the evaporation is——

A. It is 1,374 acre feet above the Kingman Crossing, and 82.5 acre feet below the Kingman Crossing, and we calculate it with three feet. That gives above the Kingman Crossing, roughly calculated, 4,000 acre feet, the actual figures from 4,600 is calculated out of the evaporation curve, and out of the actual values, but, roughly, it would give [163] 4,000 acre feet above and 250 acre feet below the Kingman Crossing.

Q. 250 acre feet? A. Yes, sir.

Q. Now, then, you figured separately the surface water? A. Yes, sir.

Q. The evaporation of the surface water?

A. Yes, sir.

Q. Above the Kingman Crossing. What was your figure?

A. This is the other curve plotted up here. (Indicating on chart.) 0.70 per cent of the pan evaporation, which is 75 inches in Bagdad, 70 per cent of 75 inches is about 4.5 feet. 4.5 times 1,374 acre feet gives about—these are only roughly calculated, now—6,000 acre feet of pan evaporation in the upper basin.

Q. Six thousand?

A. Yes. The exact value for the whole thing was 5,850. And below, 4.5 times 82 acres, that gives about 370 acre feet below the Kingman Crossing.

Q. Well, now, excuse me, Doctor. Have you finished your calculation? A. Yes.

Q. Are we right that your calculation is

(Testimony of Heinrich J. Thiele.)

for [164] underground water above the Kingman Crossing, 4,600 acre feet?      A. Yes.

Q. Now, let us get it straight. What would be the total evaporation for a year on the surface water, that is, the stream water, above the Kingman Crossing?

Mr. Wilmer: Pardon me. Is counsel assuming that the entire basin is covered with water, or is he asking the witness to calculate from what knowledge he has the amount of evaporation from the actual stream itself?

Mr. Morgan: I am talking about the actual stream.

The Witness: The actual stream evaporation is taking into account only the width of the stream itself, but evaporation is of the whole surface of the valley.

Q. (By Mr. Morgan): That would include underground water?

A. We have the evaporation of the whole—let us put it this way. We have, when the water table is at the surface in the lower part of the basin, we have the pan evaporation figures. When the water surface is below—the ground water table [165] is below the surface, we are coming to the evapotranspiration figures.

Q. How much below the surface?

A. According to the calculations, two feet.

Q. Then it is your testimony, is it, that in this portion of the basin above the Kingman Crossing, from underground sources, any water two feet

(Testimony of Heinrich J. Thiele.)

below the surface, that there would be a loss of 4,600 feet by evaporation.

A. 4,600 evapotranspiration.

Q. Well, now, then, how about the surface water? As I understand it, in surface water you include—do you include everything above down to two feet, any water that is in this territory down to two feet?

A. Yes.

Q. As well as the actual running stream, itself?

A. Yes.

Mr. Wilmer: Pardon me. I can't understand the question or the answer, either.

The Witness: The pan evaporation values are from open water surface, and open water surface is only existing when the water table is practically at or near the surface, within two feet of the surface. [166]

Q. (By Mr. Morgan): All right, I understood that. When making your calculation, now, or can you give us a calculation of what the loss would be for that surface water?

Mr. Wilmer: Are you referring now to the actual water, or to what the situation would be if it were covered with water? I don't understand your question.

Mr. Morgan: You don't understand your witness.

Mr. Wilmer: I am sorry. I don't understand your question. I ask that counsel frame the question so we understand whether he is talking about



(Testimony of Heinrich J. Thiele.)

the actual condition existing, or a theoretical condition, if the area was covered with water.

Mr. Morgan: Let us forget that.

Q. (By Mr. Morgan): What did you call the pan evaporation——

A. Let us talk about the evapotranspiration, because this is the figure, that is the lowest figure.

Q. What I want to know, then, is what would be the figure for the running water, the actual running water that is on the surface?

A. I cannot give you the figure.

Q. You cannot give me that?

A. No. [167]

Q. You said something about 6,000 acre feet. What did that comprise?

A. This figure is only for the whole basin, when the water table is at the surface of the whole basin.

Q. That would only be changed if there was no water at the surface?

A. Yes. We have it in the later part of the year in the upper part of the valley, of the basin.

Q. Let us go down below the crossing, then. Do you figure any surface flow loss down there?

A. Of course, the water table is all year over near the surface.

Q. Near the surface?           A. Yes.

Q. And you don't really actually figure any other loss from the 250 acre feet below the Kingman Crossing, is that right?

A. That is correct. 250 acre feet of the evapotranspiration.



(Testimony of Heinrich J. Thiele.)

Q. All right. Now, then, you don't mean to say, do you, that all this territory which is shown on this exhibit—the mark is covered up, I have forgotten what number it is—well, the exhibit which I am pointing at, that which is marked in [168] yellow is actually a running water carrier? By that I mean the whole stream doesn't flood that surface?

Mr. Wilmer: At what time?

Mr. Morgan: Ordinarily, I am talking about.

The Witness: This basin is supplied by the river with water. The river is supplied with ground water for this basin, bringing it up to a certain point.

Q. (By Mr. Morgan): Yes, sir. Now we are getting somewhere. Now the actual river channel or stream channel above the Kingman Crossing averages what width? I am talking now about the running water channel.

A. It is changing between 100 and 500 feet.

Q. We are not talking about when there are floods.

A. No. Also in this part of the year it is changing. There are areas where it is very narrow and other parts where it is very wide.

Q. How do you account for that?

A. Because of ground water that is coming out of the soil. It is dammed up. We have a damming up.

Q. I understand that at the Kingman Crossing there is a barrier?

A. Yes. [169]

Q. And when that surface water gets down there it tends to pile up and spread out. What I am try-

(Testimony of Heinrich J. Thiele.)

ing to find out is what is the width of the actual channel that carries this water?

Mr. Wilmer: Surface or underground?

Mr. Morgan: Surface water.

Mr. Wilmer: The witness is plainly confused. Do you mean surface water or underground water?

The Witness: There is no actual channel here of surface water, because the valley is rather even, as we have shown in one of the pictures here, and the water is spread over this area.

(Indicating on chart.) When you see the surface elevation of this cross-section here, you see that you cannot talk about a channel, a dug-in channel into the ground.

Q. (By Mr. Morgan): Take your seat. Maybe we can get to it a little better than that. Isn't it a fact, from your observation made when you were doing this work, that you went up and down this river channel, and particularly the part of the river channel that carried running water, isn't that right?

A. Surely. I made several observations, but I did not go there with especial attention to see the river channel. [170]

Q. Isn't it a fact that the river channel, or the carrying channel is, generally speaking, in the center of the territory, this territory that is marked in yellow?

A. You see that on the chart there, that it is not always in the center, that it is at either one side or the other.

Q. That is right, it may go to either side, but,

(Testimony of Heinrich J. Thiele.)

generally speaking, it is in the lowest part of this whole basin? Isn't it set right there? That is the channel?

A. I don't understand your question, the lowest part of the basin?

Q. Yes. Water naturally would run to where the——

A. You mean at the deepest point in the basin?

Q. All right, call it the deepest.

A. Not necessarily, because it may cut in after the next flood another storage, another area where it is cutting in.

Q. This basin, from the river—let us get this straight. This basin from the water-carrying portion of the stream itself rises on either side, doesn't it?

A. No, it doesn't rise necessarily. You may have just a little bend filled up by the last flood [171] that the year before the actual course of the water was a hundred, 200, 300 feet, 500 feet away.

Q. You don't mean to say that this whole territory marked in yellow is absolutely flat, is it?

A. No. As you see, on this plain here we have several areas where we have lower points.

Q. That is right. The stream, the water itself would tend to follow the lower points, isn't that right?

A. Yes, it does.

Q. And then from those lower points, the valley slopes up on each side to some extent?

A. To some extent. And it comes down again, it slopes down because it is filled up with gravels,

(Testimony of Heinrich J. Thiele.)

and it cuts down again underneath that deepest point.

Q. Isn't it a fact that this actual river channel that carries the water ordinarily is at least eight feet on an average above the territory that goes through, below the territory that goes through?

A. No, that is not true. We don't have a channel here. We have a flood plain, to a certain extent.

Q. We are not talking about a flood. I am talking about the ordinary flow of water.

A. You cannot talk about a channel that is [172] dug in eight feet deep, that is impossible.

Q. How many feet deep would you say it was?

A. As you see on this chart again, you cannot talk about a dug-in channel at all. It is sloping slightly up, and you see that this is within a few feet covering a wide plain. Therefore, we made this investigation to show this to the court, that we don't have a channel here, but we have a plain which is sloping up and down, but dug by the river, by the creek.

Q. Sloping up on either side?

A. Not sloping up even, sloping down at certain points.

Q. All right. Now, then, we will assume that water runs continuously down this plain here, that it is not a vast amount of water, but the ordinary run of water. We will assume it runs continuously. It would follow a course, wouldn't it?

A. It would follow a course. Each water particle follows a course.



(Testimony of Heinrich J. Thiele.)

Q. And how wide would that course be?

A. This course is changing, as I mentioned already, between 100 feet, less than 100 feet, even, up to 500 feet width.

Q. The 500 feet width would be down at the Crossing? [173]

A. Not only down there. It is up to point 16, in all this area here (indicating), it is widening out, coming together again.

Q. Let us get this, then, Doctor. Your observations made beginning February 18th, did you actually see a running stream of water any place in this territory that was 500 feet wide, that is running?

A. Not running.

Q. Sir?

A. It is not running. It is moving to a certain degree, because always water is obeying the law that it is falling to a certain direction.

Q. You did find places where it had a definite width, say, of 20 feet, maybe 30 feet?

A. Well, no, not 30 feet. A little bit wider. You can say 50 to 100 feet is the least of the width.

Q. That was actually covered with water?

A. Covered with water, and single boulders were sticking out.

Q. All right. Now, then, if that water ran continuously 30 feet or 50 feet wide down this territory, how far on either side would that water percolate?

A. The percolation of that water is taking [174] the following course. Here is the river, the actual width of the water, and it will be feeding into the



(Testimony of Heinrich J. Thiele.)

ground water this way. (Indicating.) It is coming here through the ground water surfaces. It is feeding in this area, and the calculation is made how much water is going into the soil here, depending on the permeability of this.

Q. Yes, sir. It wouldn't feed upwards to the surface on either side?

A. It is pressing up. Yes, it is pressing, because this point is higher than the point—higher than the other areas, so it is feeding into both directions, into both sides of the valley.

Q. How long would it take to extend out 600 feet on each side?

A. For the single water particle it takes quite a bit of time.

Q. I believe you said 60 feet a year it was going down?

A. For a single water particle, yes. We were talking about that figure yesterday, but the pressure, the higher pressure of this water is pushing up the other particles here. There isn't only the movement, but the pressure. It is not static, it is dynamic, the movement of water.

Q. Was I right in saying that you testified [175] that on its course downstream that the movement would be at the rate of about 60 feet a year?

A. I was testifying that this is the movement—that the movement of ground water in one year can be between 60 feet and half a mile. I think I gave that figure yesterday.

(Testimony of Heinrich J. Thiele.)

Q. And of course going down it would travel faster than it would to either side?

A. It can only go according to the slope. The slope is making a difference.

Q. Now, there is some controversy among us, and I don't understand this. I think this plat, which is in blue, I think you said, at least that was my understanding, that that blue simply represents a cross-section of the old river channel?

A. Yes, sir.

Q. Is that right?                      A. That is correct.

Q. In other words, this old river channel ran across this way? (Indicating.)

A. That is correct.

Q. And the upper portion represents the present channel that runs across it?

A. That is correct.

Q. Now, in making your experiments, did you follow the river down to the Zannaras point of diversion [176] below the Kingman Crossing? That is, personally?

A. Yes, I did. I didn't follow it this way, as you pointed out. I went from Zannaras pump station to Kingman Crossing.

Q. I see. You didn't examine the terrain in between, then?                      A. Yes, I did.

Q. You did?

A. Yes. But I started with my investigation at Zannaras' pumping station and went to Kingman Crossing.

Q. Well, you made some experiments here with

(Testimony of Heinrich J. Thiele.)

your machine at what points below the Kingman Crossing?

A. The points I mentioned on this chart here, these points I made observations, and these points. (Indicating.)

Q. I see. Those on the chart.

Mr. Wilmer: To get the record straight, you are referring to Defendant's Exhibit R?

The Witness: Yes, R. Survey stations 7 to 33.

Mr. Wilmer: That is the stations shown above the yellow line on top of the bedrock? Those are where you made your observations? [177]

The Witness: Yes, sir.

Q. (By Mr. Morgan): This creek channel after it passes the Kingman Crossing flows into what is practically a canyon, doesn't it? A. Yes, sir.

Q. Did you go through that canyon?

A. I did.

Q. Did you see the falls there?

A. I did.

Q. Could you estimate how much water in February was going over that falls?

A. I did not estimate it.

Q. Could you tell us about it, how much water in width and depth?

A. I cannot tell you. I didn't estimate it at all.

Q. You couldn't even make a guess?

A. No, sir.

Q. I asked you yesterday about borings that were made, and you told us that you—at least, I

(Testimony of Heinrich J. Thiele.)

understood you to say you had some borings made across this territory below the dam?

A. Below the diversion point there were a number of borings made.

Q. Did you have that done? [178] A. No.

Q. I mean, was it done while you were there?

A. Yes, some of them were driven while I was there.

Q. Some of them? A. Yes.

Q. Which ones were done while you were there?

A. I don't know the numbers.

Q. Well, was it the ones in the river channel?

A. It was— (Indicating.) All these borings were made inside the yellow area.

Q. But you don't know which ones were made when you were there?

A. I remember one boring, but I don't remember the number.

Q. Where? Could you point out where that was made on the plat?

A. This region here, near point 5. (Indicating on chart.)

Q. That is the only one you know about?

A. Yes.

Q. How deep did that one go?

A. I don't remember.

Q. Did it go 10 feet, 50 feet, maybe?

A. No, about a hundred feet.

Q. You have no idea, I take it, as far as [179] you are concerned, you don't know whether the other borings were made that you looked at?

(Testimony of Heinrich J. Thiele.)

A. I have seen the bore samples, but I don't know the place.

Q. When they were made you don't know?

A. No, sir.

Q. Are any of these borings, to your knowledge, within the bed of the creek proper?

A. Yes, sir.

Q. Yesterday you testified that water couldn't possibly run down the surface of this river from the Bagdad point of intake to the Zannaras point of diversion in the dry seasons?

Mr. Wilmer: No, he didn't testify to any such thing at all, your Honor.

Mr. Morgan: I understood he did.

Mr. Wilmer: If counsel will impeach him in the proper fashion, fine, but I recall no such testimony.

Mr. Morgan: Well, except in times of flood.

Mr. Wilmer: I recall no such testimony at all.

The Witness: I didn't testify that. I was pointing out the actual figures of 1953, where we have a certain amount of water flowing at the station, at the diversion point of the Bagdad Copper Corporation, and only pointing out that according [180] to the evapotranspiration, the flow inside of this area is taken care of in this year 1953. In other years these conditions are different. These are flow conditions only for the year 1953.

Q. (By Mr. Morgan): Sit down, Doctor. Didn't you testify that it was your conclusion that in the ordinary year, and with the ordinary water that is available in that creek, that because of the high



(Testimony of Heinrich J. Thiele.)

evaporation that the water couldn't possibly run on the surface——

A. No, I testified——

Q. Down to the Zannaras point of diversion?

A. I testified yesterday that in June, 1951, and June, 1952, there was no water passing the diversion point of the Bagdad Copper Corporation, according to the gauge station measurements, but that at that time water could pass the Kingman Crossing, so far as the groundwater was passing out here, which amount can be calculated.

Q. All right; what is your opinion today? Assume that the Bagdad people were not pumping any water from the sump during the dry seasons. Could you give an opinion as to whether or not that water, if allowed to go down, would reach the Zannaras point of diversion?

A. This water could not possibly reach the [181] point of diversion of the Zannaras.

Q. Your testimony, then, is the same as it was yesterday?

A. It is the same as it was yesterday.

Q. Would that water reach the Kingman Crossing?

A. It possibly could not reach the Kingman Crossing.

Q. Sir?

A. It could not reach the Kingman Crossing.

Q. It could not reach the Kingman Crossing, either?

A. No.

Q. That is your definite opinion?

(Testimony of Heinrich J. Thiele.)

A. That is my definite opinion.

Q. Based upon your calculations as to evaporation, and your knowledge of what the ordinary flow of water would be coming down that creek?

A. Yes, sir.

Q. Therefore, it was your opinion that even though the Bagdad people take all the water at their point of diversion, it makes no difference, because it would never reach Zannaras?

A. In June of the years 1950—1951, 1952, and 1953.

Q. That is your opinion?

A. That is my opinion, as you can plainly [182] see on this chart. We get here only a flow of 200 acre feet, and when you look up the list of the gauge readings of 1951 and 1952, you see that this flow is zero. It means it is still lower than 1953, while the evapotranspiration is taking out 400 acre feet when the water is available.

Q. And you say that under such conditions the water wouldn't even reach the Kingman Crossing?

A. No, sir.

Q. Now, Doctor, you weren't acquainted with the situation up there? That is, you don't know the history of this stream, do you?

A. I don't understand——

Q. I will ask you this question: If you had before you definite evidence on the part of the plaintiff whom we are representing, or one of its witnesses, that from April through the fall of 1950 he always saw water, running water at the Kingman

(Testimony of Heinrich J. Thiele.)

Crossing, and that the flow of water there varied from a thousand gallons a minute to no lower than 200 gallons a minute, would that change your view that this water couldn't run down?

A. No; it wouldn't change my view, because it is in part ground water that is coming out at the Kingman Crossing.

But may I criticize your question? Are [183] these figures based on gauge readings, gauge station readings?

Q. Based on everything.

A. I am pointing out——

Q. If Mr. Schultz said——

Mr. Wilmer: If it please the Court, I object to counsel arguing with the witness.

Mr. Morgan: I was answering his question.

Mr. Wilmer: I object to counsel arguing.

The Court: Well, you have his testimony and this man's testimony. It is for the court to weigh it. You can't argue with this witness.

Q. (By Mr. Morgan): Now, Doctor, if you had before you the testimony of Ernest J. Green, a witness for the plaintiff in this action, given in this court, that on the 21st day of July, 1951, he made a measurement a little less than a quarter of a mile below the Kingman Crossing, and a cross section of the channel was a little over 24 inches wide and six inches deep, and that the rate of the flow was six feet in 15 seconds, or 24 cubic feet a minute, which would mean about 179 and a fraction gallons per minute, would that evidence tend to change your

(Testimony of Heinrich J. Thiele.)

opinion that this water—— A. No, sir. [184]

Mr. Morgan: Just a minute.

Mr. Wilmer: Just a minute. We make the same objections. He can't pass on that.

The Court: Sustained.

Q. (By Mr. Morgan): Then if you had the testimony given by Mr. Dickie, given in this cause, that in October, 1950, in the October, 1950, dry season, that at the Zannaras pump there was approximately 5,000 gallons a minute being delivered there, would that change your testimony?

Mr. Wilmer: Same objection.

The Court: Same ruling.

Q. (By Mr. Morgan): Or if you had before you the testimony of Mr. R. L. Daniel, testifying for the plaintiff in this action, that from August to December, 1950, he crossed the Kingman Crossing practically once a week, and that there was running water in that crossing, would that change your opinion? A. No sir.

Mr. Wilmer: Same objection.

The Court: Same ruling.

Mr. Morgan: That is all.

Mr. Wilmer: That is all.

(Witness excused.)

The Court: We will have our morning recess. [185]

(Recess.)

The Court: You may proceed.

Mr. Wilmer: I would like to recall George Colville for just one question.

GEORGE W. COLVILLE

recalled as a witness for the defendant, having been previously duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. Mr. Colville, you were sworn and testified previously? A. Yes, sir.

Q. In connection with the question asked you as to the length of time that your survey party was in the field, in connection with your survey, you answered it was two days.

What portion of the survey did those two days cover?

A. I was referring to the days that we made the survey between the Kingman Crossing and Mr. Zannaras' point of diversion.

Q. By his point of diversion, you mean the point of diversion set forth in his application?

A. Yes.

Q. That two days was consumed in determining where his true point of diversion was as reflected [186] in his application and certificate?

A. Yes, sir.

Q. Now, with respect to determining the width and area of the channel from the Bagdad sump to the Zannaras' mill, how much time was spent?

A. Altogether approximately a week, with two field parties.



(Testimony of George W. Colville.)

Q. In the field?           A. In the field.

Q. So that the survey as shown by the yellow on the map there, which is the defendant's Exhibit M, I believe—no, N in evidence, there was approximately a week, with two field parties, making that survey?           A. That is correct.

Mr. Wilmer: That is all.

Mr. Morgan: Could I ask a question?

### Cross-Examination

By Mr. Morgan:

Q. George—I can't remember your last name?

A. Colville.

Q. In making that survey, did you make any survey of the channel itself? When I say the channel, I mean that the channel that the surface water runs down? [187]

A. You mean did we measure it?

Q. Yes.

A. Oh, if you could call it a channel, the wide stretches where there was water present at the surface, we surveyed that all out as we went along.

Q. As I understand it, you would find wide stretches of the water?           A. Yes.

Q. For instance, at the Kingman Crossing, it is pretty wide there?           A. Yes.

Q. And I believe there is another place below the Bagdad point of diversion where it comes up against rocks, and spreads out?

A. Well, the entire creek plain spreads out and

(Testimony of George W. Colville.)

widens out, and narrows down. There is no uniformity to the width of it.

Q. I understand that in some places it is wider than others, but on the whole it would average about how much?

Mr. Wilmer: Is counsel referring to the flowing stream, or the——

Mr. Morgan: Flowing stream. He knows what I am referring to.

Mr. Wilmer: I don't.

The Witness: You mean the water? [188]

Mr. Morgan: Yes, just the water.

The Witness: Well, we didn't take that at each point. Those were scattered sections across there, so I couldn't say about the average width of it.

I know it was pretty wide at the Kingman Crossing. It was approximately 100 feet wide, with saturated ground on both sides of the open water.

Q. (By Mr. Morgan): But farther up there were places where it was not nearly that wide, was it? A. Occasionally there were narrow places.

Q. Generally speaking does this channel have banks on either side? A. No.

Q. Was the territory on either side higher than where the water runs, the ground, I mean?

A. Well, in some places it is, although in some places the ground appears to be lower than where the water is actually running.

Q. Of course, the water would have to follow the lowest point?

(Testimony of George W. Colville.)

A. That is the natural tendency, everything being equal.

Mr. Morgan: I think that is all. [189]

Mr. Wilmer: That is all.

(Witness excused.)

Mr. Wilmer: Mr. Fletcher.

### HERBERT C. FLETCHER

called as a witness for the defendant, having been first duly sworn, testified as follows:

#### Direct Examination

By Mr. Wilmer:

Q. Will you state your name, please, for the record?

A. Herbert C. Fletcher, F-l-e-t-c-h-e-r.

Q. Where do you live?

A. I live in Phoenix.

Q. And what is your work?

A. I am in charge of the research, the watershed management research for the Forest Service at Tempe.

Q. For the Forest Service?

A. For the Forest Service at Tempe.

Q. Tell us first, please, something of your educational background.

A. Well, I am a graduate of Forestry and Geology from the Utah State Agricultural College.

I have a B.S. from there. [190]

(Testimony of Herbert C. Fletcher.)

I have a Master's Degree from the University of Missouri, in soils and sedimentation.

And I have Doctor's work at the University of Oklahoma, in soils and sedimentation.

Q. How long have you been connected with the research work you are doing at the present time?

A. Since 1948.

Q. When did you leave your educational pursuits and start in actual practice?

A. In 1935.

Q. And since that time have you been engaged in work related to water, soil management, and so forth?

A. I was employed by the Soil Conservation Service down in this country in 1935 until 1939.

I have been engaged in water conservation work.

During the period I was in Washington, D. C., I had charge of the Division of Water and Forest Information for the Forest Service.

Q. Have you had occasion in connection with your work over this period of time to conduct experiments, and make studies, write papers, with respect to water losses from soils, among other things?

A. Yes, I have been engaged here ever since I [191] returned to the southwest in 1948.

Q. Where have your experiments been conducted?

A. Most of our studies I have been connected with are at the Sierra Ancha Experimental Forest. That is about 40 miles north of Globe.

(Testimony of Herbert C. Fletcher.)

Q. And with respect to Roosevelt Lake, where is your station?

A. We have studied all around Roosevelt Lake, at various locations, at different elevations, ranging from the lake level up to the higher elevations, and the fine fir type, about 7,000 feet.

Q. Did you have occasion to make an examination of the Burro Creek area, from the Bagdad Sump down the creek, in the area that has been discussed here in the evidence?

A. Yes, I have flown over the area, and I have gone down the Creek and examined the Creek channel.

Q. When was that done?

A. That was, let's see, Monday. Monday.

Q. This past Monday?

A. This past Monday.

Q. Before going into some of the scientific work you have done, in your flight over the area, that was for the purpose of getting a general aerial view of the entire area, is that correct?

A. Yes. I wanted to get a general view of the [192] area, and the vegetation associated with the area, and the general geology, aerial geology of the area.

Q. In that connection, you heard Dr. Thiele testify with respect to the general topographical conditions, should I say, of the area with respect to the mountain range which he described, and the appearance of an old channel where the Burro Creek enters the mountain range?

A. Yes.



(Testimony of Herbert C. Fletcher.)

Q. Generally speaking, Doctor, did your observation confirm those conclusions?

A. From the aerial observation, I would say, that I made, I think that there is definitely an older river stream, that is older than the present Burro Creek, that cuts across the general terrain.

Q. Referring to the exhibit which is in the upper right-hand corner of the board there, the brown markings on that, does that generally confirm, or generally indicate your impression of the general course of the old channel?

A. That looks approximately correct, as far as I could tell.

Q. Now, Doctor, have you made certain experiments and studies with respect to the losses of water from the soil due to transpiration, and, in connection with that, evaporation? [193]

A. Yes. I have conducted quite a number of studies on evaporation losses from—not only from bare soil, and from different types of vegetation, I have lysimeter—for the record, a lysimeter is a closed, you might say, pot. They are larger than actual pots, but they are a closed bottom container, in which blocks of soil are placed in them undisturbed, and then we sometimes take the plants as they exist right in these blocks of soil, and transfer them into these lysimeters, so that we can measure the evaporation and the transpiration losses under different types of water saturation.

Q. Do you have a publication of the, what is it, the Forestry Service, which illustrates the type of

(Testimony of Herbert C. Fletcher.)

experiments and examinations and studies that have been made in that connection?

A. Yes. (Handing document to counsel.)

Mr. Morgan: I think we will object to that. To save time, we don't contest this witness' qualifications.

Mr. Wilmer: The purpose of it, if it please the Court, is to, without going into a great deal of detail through testimony, to support the value of these studies by showing how they are made. If he wants me to take in detail the whole thing to support the value of the findings they have made, [194] I can do that.

Q. (By Mr. Wilmer): This was prepared by you, is that correct?

A. Yes, I prepared this.

Q. And this represents the studies that have been made, the various experiments that have been conducted, and the conclusions that have been drawn from those studies?

A. Well, it shows you the various types of instruments we use in determining evapotranspiration, and also the measurements we have made at various locations there under controlled conditions.

It would show also what a lysimeter is, and some of the relations between the use of different types of vegetation, their use of water in relation to stream flow.

Mr. Wilmer: It is not offered as evidence—it is offered, if it please the Court, as showing the studies that have been made by this witness, and

(Testimony of Herbert C. Fletcher.)

for the purpose of demonstrating the method used, and the probable validity of the reports achieved.

The Court: All right.

The Clerk: Defendant's Exhibit Z in evidence.

(Said document was received in [195] evidence and marked Defendant's Exhibit Z.)

Q. (By Mr. Wilmer): Now, Doctor, have you had occasion with respect to various elevations, and various types of temperature exposure, and so forth, to have made certain studies, and to have prepared certain graphs and charts to demonstrate the loss of water?

A. Yes, I have. I have from the data and information that we have collected, I developed several types of graphs, or several types of—examined several types of conditions, and portrayed them in graphs which show the relationships between precipitation, stream flow, and evapotranspiration.

Q. And with respect to what particular areas and points?

A. I have examined, I guess, every weather station in the southwest, that is, Arizona, New Mexico, and west Texas, in which I have precipitation and temperature records available.

Some of those that I have examined I can illustrate here for you, some of those that would correspond to the subject.

I have them at Flagstaff. I have them at Alpine, Childress, Texas, Kingman.

I don't have them graphed up for Jerome, Roose-

(Testimony of Herbert C. Fletcher.)

veld, Wickenburg, Ruby, Arizona, [196] Safford, Springerville, Phoenix, Flagstaff, McNary.

In fact, I have them for most weather stations throughout the southwest.

Q. Doctor, in other words, you have engaged exceedingly extensively in studies over the southwest, with relationship to water losses from soils under varying conditions? A. That is right.

Q. Did you have occasion in connection with the situation at Burro Creek to work with Doctor Thiele in the preparation of the graph, or whatever you want to term it, which has been put up here, and has been received in evidence as——

Mr. Wilmer: If it please the Court, this, I believe, I did not offer, which I should offer at this time, being Defendant's Exhibit Y for identification.

The Court: It may be received.

The Clerk: Defendant's Exhibit Y in evidence.

(Said document was received in evidence and marked as Defendant's Exhibit Y.)

The Witness: Did I prepare this?

Q. (By Mr. Wilmer): Did you work with Doctor Thiele in the [197] preparation of the information, and the portion of the chart?

A. Yes, I worked out the—I charted by the use of formula developed by Dr. Thornthwaite, in an approach to rationalization and classification of climate, in which a formula has been developed by



(Testimony of Herbert C. Fletcher.)

him, which I have used in all of these studies that I have.

Q. Who is this gentleman you referred to?

A. He is a member of the—let's see, he is the consulting climatologist for Johns Hopkins University.

This is more or less probably the accepted method of classification and rationalization of climate.

I have taken this formula and adapted it to the conditions here in Arizona, and adapted it to the development or the measurement of stream flow.

Q. You would say that in your opinion and judgment and adaption you have made results in an accurate and reliable formula to apply?

A. Yes, I would. I have a publication now, or in process of being published, in which I have taken all of these various precipitation stations and analyzed them, and developed a map of the southwest which shows the various water-using areas, [198] and their relationship to sediment, and that is now in the process of publication.

Q. That is one which you, yourself, have prepared?

A. That is right. And I have taken the same information, information of the same type, and plotted it for Bagdad, which doesn't have as long record as some of the other places that I have plotted, but it does give you the same general picture.

In other words, you don't have quite the length of record there that you have at Phoenix, for example, or Tucson, or Yuma, or a lot of these other



(Testimony of Herbert C. Fletcher.)

places, but you do have a fair record, and it indicates somewhat the same general conditions as I find in other places.

Q. All right, now, Doctor, you speak of an application of this formula. Would you tell us how that is applied, what factors you consider, and so forth?

A. Well, you take the temperatures, the evapotranspiration. The thing we are getting at is some way to figure the evapotranspiration.

Evapotranspiration is a very difficult thing to measure, because there are so many factors that come into it, and by taking the temperatures [199] and the precipitation, and applying it into this formula, we can make out a potential evapotranspiration curve.

And this curve is then a balance between the precipitation of the area, and the temperatures, and the humidity, and those climatic factors of that type.

Q. You say the potential evapotranspiration. Why do you say "potential"?

A. I say potential because it doesn't necessarily say that that is what occurs continually. It doesn't occur in areas that are not completely supplied with water, like you would have in this channel we have been talking about. The water table there is high.

Out on the slopes of this area you have an entirely different situation. There is water available at one period of the year. There isn't any available at the other period of the year. Consequently, the

(Testimony of Herbert C. Fletcher.)

evapotranspiration isn't as high there as it is down below, because there is not the water to be evaporated or transpired.

Q. Then in this Exhibit Y, whenever the language "evapotranspiration potential" is used, it refers to the amount of water which would be evaporated if at all times—— [200]

A. If there were available at all times water being supplied from underneath.

Q. So that if in a period of shortage the water isn't there, the potential is there, but the water doesn't escape because it is not there to escape, is that right?

A. That is correct. I have another chart here which you may want to look at a little closer, which shows what the evapotranspiration rate is over this area.

I used this as a basis for developing, when I was developing these curves in the original, of trying to get at what the evapotranspiration was. I took the precipitation and plotted it in inches per month against the months. In this direction (indicating). Then I took the water used by plants under normal conditions, and you find that it pretty generally follows the precipitation pattern, except when temperatures are lower, in the months of January, February and December or latter November and December, when you get colder temperatures.

Consequently, plants are more or less dormant during those periods, some types of plants. Consequently, precipitation will rise above the use in some

(Testimony of Herbert C. Fletcher.)

periods, and in both ends of the year, [201] when there is naturally a lag between the vegetation and the precipitation, because vegetation doesn't start to grow until along in April, to any great extent.

Then you have a decline in precipitation during March, and June, July; then in July you have the coming up again, and then in August and September you have the summer rains, which are characteristic of the eastern part of this, which would be characteristic here in the Bagdad area (indicating on chart).

It is not true over in the western part of the state, necessarily, because the influence of the summer rains is not as large over there as it is in the eastern section.

Then as you come down in the winter, the precipitation actually goes up in the winter, and your vegetation comes off again.

Then if you plot, using the formula as developed by Mr. Thornthwaite, you plot the evapotranspiration of that, you will see the potential there goes up as high as ten inches in the Roosevelt area, which is a little higher, I think, than we find in Bagdad. Although it corresponds quite generally.

Q. Now, referring to the fact that the use of [202] water by plants, generally, follows the precipitation line, lagging somewhat behind it, is that true that it relates to the ordinary normal soil conditions?

A. That is the general over-all picture of the southwest. I would say this relates pretty generally

(Testimony of Herbert C. Fletcher.)

to the general over-all picture, not taking into consideration plants that are at the Valley bottoms, where you have an excess, or you have an accumulation of water from the winter periods, on either side.

Q. Now, under the conditions that you have spoken of where the plants are in the water, I mean, where they are in the water-bearing area, that is, they are in a valley close to the river, or there is a saturated surface, how does the consumption of water by such plants compare with the consumption of water by a plant growing up on a bank, we will say?

A. Plants that have, as we say, their feet in the water continually, that is, their roots in more or less, where there is no stress on the plant as far as moisture is concerned, then they would pretty generally follow this evapotranspiration curve.

Mr. Wilmer: Will you mark this for [203] identification?

The Clerk: Defendant's Exhibit AA for identification.

(Said document was marked as Defendant's Exhibit AA for identification.)

Q. (By Mr. Wilmer): Now, the graph you have been referring to is Defendant's Exhibit AA for identification.

For the purpose of the record, would you state exactly what the various lines on that indicate?

A. Well, the dashed line indicates the precipita-



(Testimony of Herbert C. Fletcher.)

tion during the year, that is, the average for Arizona.

The solid line is the water used by plants with optimum water supply.

Of course, you have to realize that this is, for most of the vegetation in Arizona, this is an artificial condition, because most of the vegetation doesn't have it, but as we call them phreatophytes, or those plants that have their feet in the water, this would be about a normal condition.

Then the other line, the "X"-ed line shows the water used by plants under normal conditions, that is, under conditions where they don't have all of the water available that they need for [204] growth.

Q. I take it that the use of a plant under normal conditions, according to your study, Doctor, then would be around three inches, and the use under optimum conditions would be under ten inches?

A. That would be the maximum by months. During April the maximum use would be about three inches. During the summer months, about three inches.

Q. And correspondingly, in those same periods, the use——

A. The use under other times of the phreatophyte type of vegetation would be nine or ten inches.

Q. When you say phreatophyte, do you mean any particular type of vegetation?

A. No. That is one that has its feet in water. They are distinguished from the hydrophytes, the



(Testimony of Herbert C. Fletcher.)

ones that grow directly in the water, and the phreatophytes have their roots very close to the free water table all the time.

If there is any stress, any point in their growing season where they have to send down excess roots, they generally show that stress in wilting very rapidly.

Q. Have you made any measurements or experiments [205] to determine the amount of water which a given type of vegetation will transpire in a given period of time?

A. Yes, I have made quite a few measurements.

We have different types of grasses. I measured, I guess, thirty or forty different types of grasses that are shown in that bulletin there.

We have measured Manzaneta, Oak Brush, and the Zarophrytic type of plants.

We did take a plant like Manzaneta, and give it all the water it would use during the year and we found it uses water continually during the entire year, where grasses make no growth at all in the winter months and in the fall months, and do some little growth in the spring, but never put out seed stalks, and most of their growth is during the summer months when they make their growth on the summer moisture.

Q. Are you familiar with the literature with respect to examinations made of cottonwood and mesquite, and similar types of vegetation?

A. Yes, I am acquainted with that in a general way.

(Testimony of Herbert C. Fletcher.)

Q. Generally speaking a cottonwood of substantial size will use a lot or a little water? [206]

A. Oh, let's see. I think in Safford Valley, the U.S.G.S. have a report in which cottonwoods use as high as six acre feet of water.

Tamarisk is another one that uses between six and seven acre feet.

Baccharis, a type of willow, will use between six and seven acre feet of water.

Q. And what about mesquite?

A. Mesquite is a plant that is a little different from either one of them.

Mesquite will grow if it has a lot of water available, will use, I would say, oh, between three and four acre feet. It is not quite as high a user as some of the others, although it will grow much deeper than some of the other plants for water, if necessary. It is a type of plant that—well, it is in between. It is sort of a Zorophrytic type of plant, which is a drought-resisting plant.

Q. Now, in the course of your examination, I take it you did go down the creek, Doctor?

A. Yes, I went down the creek and examined the channel.

Q. Did you have occasion to examine the type of vegetation found in the channel?

A. Yes. I found that there is cottonwoods, [207] and black willow, along with quite a little mesquite, and along with catspaw.

Q. Would you please explain to me, Doctor, what

(Testimony of Herbert C. Fletcher.)

the evapotranspiration curve is, and how it is arrived at?

A. Well, evapotranspiration curve is the amount of water that will be evaporated or transpired by vegetation during the entire year.

Q. Is it or is it not a matter of considerable importance to you in determining the probable water loss of an area to ascertain whether or not it is covered or is not covered with vegetation, and the type of vegetation?

A. It is very important, yes. We rely on it almost entirely in determining types of areas, where we can expect water yields at all.

Q. And why is that?

A. Because it relates the precipitation and temperatures to the water yield.

Q. Will an area which is denuded of vegetation yield more water than one which is covered with vegetation, or is that a proper question?

A. That is an old question. From our studies that we have conducted at the experimental forest, we find that bare soil uses about as much water. There is about as much water evaporated from bare [208] soil as from areas covered with grass, or areas covered with shrubs.

Q. Why is it, then, the question of whether there is or is not vegetation important as to an evapotranspiration curve determination?

A. Because when you have vegetation on the area, it evaporates more water, there is more water lost.

(Testimony of Herbert C. Fletcher.)

Q. Now, going to this specific problem, Mr. Fletcher. From what source did you get the figures that you used in computing the curve which is shown there as the potential, evaporation potential?

A. First of all, I plotted, I made this chart here in which I took the long time records of precipitation and temperatures from the Bagdad Station, which is the official records of the Weather Bureau. You can get them out of the official Weather Bureau records.

Mr. Wilmer: May this be marked for identification?

The Clerk: Defendant's Exhibit AB for identification.

(Said document was marked as Exhibit AB for identification.)

The Witness (Continuing): They are published monthly and [209] yearly each year. I took those long time averages which I plotted using the formula of Mr. Thornthwaite, and plotted the evapotranspiration curve, which is this solid black line here (indicating).

Q. You are referring to Defendant's Exhibit AB for identification?

A. Yes.

Then I plotted the precipitation as recorded in the official Weather Bureau records, by the dashed line.

Then allowing for a certain amount of soil and moisture storage; in other words, when vegetation



(Testimony of Herbert C. Fletcher.)

starts to grow, there is a certain amount of precipitation that is stored in the soil, so that in order for any water to be available for stream flow, the soil has to be above what is termed field capacity.

In other words, there is still considerable moisture in the soil when it is below field capacity. Consequently, with so much moisture stored in the soil, as your evapotranspiration curve begins to rise, which the vegetation uses to grow on, you have a point that is below the amount of precipitation that is available as this vegetation grows it depletes the soil moisture down to what we [210] term the wilting point.

And below that point the vegetation begins to wilt, and a lot of these phreatophyte type of plants, they will die.

Our desert xerophytic type of plants have a faculty of being able to go dormant during those dry periods. Consequently, they live from year to year.

After they have exhausted this moisture, there is no more moisture available in this period of red in the chart; and you will notice that the dashed line, even though the precipitation in the summer months comes up in July and August and September, it never supplies enough moisture to satisfy the evapotranspiration needs, or what would be evaporated and transpired if it were available.

Then as you come over to November, the evapotranspiration curve falls down, and the precipitation curve comes up.



(Testimony of Herbert C. Fletcher.)

It takes a certain amount of moisture. It takes so much precipitation to raise that soil moisture back up to field capacity, or the point where water will run through the soil and contribute to stream flow.

I am speaking of this in broad, general [211] terms over an area.

Then after the soil is at field capacity, you have, in the Bagdad area you have a very small part there where it is at field capacity, or above, in which water is contributed to stream flow.

If you were depending on the water that fell in the immediate Bagdad area for the mills, or whatever water rights you are contending for here, you would have but very, very little water in that stream, and most of it would be in the underground channel, because there isn't any water there. There isn't any water that actually is available. It is all used up by evaporation and transpiration, every bit that would be available.

Consequently, you are getting water that falls back in the higher reaches of the watershed, and is coming down through the sands and gravels, which is more or less protected in a general way from the evaporation when it gets down deep.

However, these plants that are along this channel are continually pumping out, they are just like you would have a pump in the valley bottom, and they are continually pumping out this water, and they will take it much deeper. [212]

Mesquite roots go down as far as forty, fifty feet.

Cottonwood roots will go down twenty, thirty

(Testimony of Herbert C. Fletcher.)

feet, and they are capable of pumping that out just the same as if you have a pump there, as far as lowering the ground water table.

Q. Now, in that connection, the potential, the evapotranspiration potential as shown at Bagdad there, insofar as the supply of water in the basin is concerned, the red would indicate the relationship between the actual precipitation there, and what would be lost through evapotranspiration if there was other water there?

A. That is right. I first had to plot this in inches, because that is what I have precipitation given in, is inches of precipitation per month.

Consequently, I have to plot the evapotranspiration curve in inches. And then we change that, we transposed that into acre feet, into this curve here.

Q. Now the curve that you just indicated in the Exhibit, which is "R," I believe—no, that is "Y."

A. Y.

Q. "Y" in evidence, represents the potential loss, potential loss of water through [213] evaporation and transpiration in the Bagdad basin below there, according to the calculation which you made?

A. Well, I would say, actually, I think, as Dr. Thiele brought out, the precipitation, the gauges are at a little higher elevation than actually in the bottom here. I think you would find, if you had it down in the bottom, they would be higher down in the bottom of the valley than they are up here.

Q. Is there a direct relationship between temperature and elevation, as to the loss of water?

(Testimony of Herbert C. Fletcher.)

A. Definitely, yes. It is not as great as you might think, however. Because, as I say, it depends on the time of the year that the precipitation occurred.

For example, now, at Flagstaff we have about twenty-three inches of precipitation.

Take over on the Gila, down on the Gila, at the head of the Salt River, and some of those areas down there where you have the same amount of precipitation, but it occurs principally in the summertime.

I can illustrate that here by a chart that I have, I think.

Well, here it is, too. This isn't the one I had reference to, but, take Flagstaff, for [214] example. Here is the chart of evapotranspiration and precipitation at Flagstaff, and it shows the area that we might expect water yield to occur.

Here is the evapotranspiration curve. Here is the precipitation curve in the dotted line.

You notice we have quite a high sum of precipitation, and in July it gets up as high as three inches. The total is about twenty-three inches for a year. But you also have a high winter precipitation, which is up to about two inches in January, and the same thing in February.

Consequently, you do have quite a lot of water left over for stream flow.

Here is Alpine, Arizona. Notice you have the high precipitation in the summertime, but it never quite reaches the evapotranspiration, the peaks of

(Testimony of Herbert C. Fletcher.)

what is actually evaporated and transpired, but you have some, you don't have as much available for stream flow over there as you do in Flagstaff, because it occurs primarily in the summertime, rather than in the wintertime, when evapotranspiration losses are lower.

Q. Now, the amount of surface evaporation from the basin, from the sump down to the Zannaras' mill, I believe has been determined as approximately, in July—— [215]

A. Well, the rainfall down here is indicated as about two inches during August. July is about an inch and a half.

Q. And the loss of water during that period of time in the basin is what?

A. Well, the losses during that time in inches is about, is a little over seven inches, so you have a difference there of, take in August, three against seven. You have got five or four inches difference.

Q. Your calculation, based upon your accepting the area as surveyed, in other words, accepting the fact that it has thirteen hundred and some acres in it, without having checked that yourself, it would be your conclusion that in that period of time out of that thirteen hundred acres exposure, there would be lost seven inches of water over the entire area?

A. Oh, yes, at least that. That is, if it were available.

Q. That is what I mean.

A. Now, as Dr. Thiele tried to point out this morning, you have that relation, that hydrostatic



(Testimony of Herbert C. Fletcher.)

head that has to be kept at a uniform rate over the entire basin.

Q. Assume that during the period of June [216] and July that surface were kept saturated, the stream bed were kept alive with flowing water, in your judgment there would be a loss of seven inches times 1,342 acres, or whatever it is?

A. That is right. That is the figure that we arrived at. It comes up to about approximately nine acre feet.

Q. About nine acre feet?

A. Nine acre feet of water for that area. It comes up to 886, actually.

Q. Eight hundred eighty-six?

A. Yes, 886 acre feet.

Q. During that one month alone?

A. That is right.

Q. Assuming that there is an acre foot per day underground flow, or under surface flow at that point, or thirty acre feet per month for those two months, it would be necessary, then, to put into the stream at the Bagdad point of diversion approximately 820 or thirty acre feet to get any results at the bottom of the basin?

A. Yes, pretty generally, I would say, because as this chart shows, the flow, the stream flow is particularly low. That means that the upper part of the basin has been pretty well generally drained. It is draining down. Its hydrostatic head is not as [217] great. This chart that he drew here this morning illustrated in a general way that thing.



(Testimony of Herbert C. Fletcher.)

And, of course, you would have the vegetation that is puffing that out. It is humping it out, at more levels than actually the hydrostatic head is.

So you would have the vegetation escaping, taking it all out or down to the wilting point of the soil or gravel.

Q. That is taking out the whole deficit between the thirty acre feet underground, and the surface flow, if you put it in there?

A. That is right.

Q. Assuming if we have an underground flow of thirty acre feet passing that Bagdad sump, that would leave a net 853 feet of water which would be required to get any water to the end of the basin?

A. You would have to have, I would say, somewhere around 800 acre feet in order to get any flow that is there. There has to be that much water. I will say this, there would have to be that much water coming into the basin continually to keep the flow at a uniform point over this point (indicating).

Q. All right, now, what would be the effect if, instead of putting 853 acre feet in there to get some live water at the end of the basin, we [218] would put in 400 acre feet in that period? Would it have any effect on the resulting output of water at the bottom of the basin?

A. Well, it would have a little, because you would raise the hydrostatic head a little, and of course that is a—you also would begin to increase your vegetation, your phreatophytes, they would begin to creep

(Testimony of Herbert C. Fletcher.)

up the channel a little farther than they actually are, because they can grow a little better.

So the more water you put in along the channel, the upper part of the channel in here, you would just tend to bring your ground water table, keep it raised up in this area. Consequently, the vegetation will increase in this area.

Most of your vegetation now is concentrated in this general area (indicating).

Consequently, it will start creeping up here, and it will start pumping it out.

It can pump it out as good as any of the rest of us.

Q. Is this the case:

The water which goes into the stream at the Bagdad sump during this period of time when your evapotranspiration loss is high would simply go to supply the evaporation loss, and that way to [219] supply the results coming out of the bottom of the channel?

A. Yes. You have got to take in here any water that is put in this period in here, after it passes this point, or after it comes to this point, any water that is put in there could be used by evapotranspiration (indicating on Exhibit).

Q. When you say it could be, Mr. Fletcher, do I understand that you mean that it is possible it would be, or that if it was there it would be?

A. If it was there it would be. It is not always there. That is what I mean.

Q. What effect with respect to restoring and

(Testimony of Herbert C. Fletcher.)

recharging the basin do these flash summer floods of rain have, assuming that it has dropped down below the normal capacity?

A. Well, they tend to raise the bottom precipitation available, as you can see it.

And from my chart here, this is the one where the precipitation begins to increase, you have definitely more water available, but it is not sufficient to take care of this thing (indicating), the difference in there.

Consequently, this is the longtime average at Bagdad. Well, this is the longtime average. This is just the one year, so actually [220] I doubt if you plot the longtime average of the figures available, it wouldn't cross this area. It would stay down here, and look like this (indicating on Exhibit).

Q. Let me see if I understand that.

The evapotranspiration potential loss which you have charted is based on the longtime records of Bagdad, to the extent they are available?

A. That is right. I think they go back about ten or fifteen years. I am not sure of that.

Q. I believe Dr. Thiele said they are both on 1953. As a matter of fact, you prepared that portion of the figures, or the Exhibit?

A. I prepared this portion here.

Q. And contrary to what he thought, your portion of the Exhibit was taken from the longtime records of the area?

A. That is right. I can't rely on one year.

(Testimony of Herbert C. Fletcher.)

Q. The water flow, subsurface and surface, and Bagdad use, is based on actual 1953 records, you understand?

A. Yes, these figures here, the red and green figures are 1953 figures.

Q. And the rainfall charted below is 1953?

A. The rainfall is the longtime average. [221]

Q. So that in years when the water use would be above, I mean, when the waterfall, the precipitation would be above 1953, it would reflect the red line accordingly, wouldn't it?

A. That is right.

Q. Now, that was what I was getting to, Doctor.

Assuming that we have a summer flood, several of them, as far as that goes; if the use of downstream water, or if the flow of downstream water in a period of shortage has dropped your water table at the upper end of the basin there right below the Bagdad sump, how much effect do those summer rains have on filling that back up to capacity again?

A. I don't think they have too much effect, as far as filling the ground water basin is concerned.

Certainly, they do supply some water to the first two or three feet of soil, as that water runs over the top, because the longer you have the water there, the more you get into the soil.

But most of these summer storms, we figure, and our studies show that we get very, very little usable water from the summer storms, [222] other than the flash flood that comes down the arroyo.

Q. Let me put it this way. The red line which



(Testimony of Herbert C. Fletcher.)

is on that "Y" in evidence really has no relationship to the average water availability in the stream during that period? Would that be a fair statement?

A. Well, it does for this particular year.

For the longtime average, I think you would find it would be more like this (indicating).

Actually if you plotted stream flow into this thing, you would find the stream flowed way down into here.

In fact, this shows the amount of water right here. This green figure shows the amount of water available for stream flow in this general area.

The water you are getting for stream flow is that water that occurs way up on the head waters in this watershed, and is merely trickling down here.

In low years, it will affect it down there, so it will affect it down here some way. (Indicating on chart.)

Q. May I ask this question, then. If we take this basin that we have got shown here, and let us [223] assume we have in the month of May no rain at all up above in the watershed, or anywhere, to feed the stream. And at this point you have no input at all, the upper end at the Bagdad sump, but the hydrostatic pressure continues to feed out water at the lower lip, which results in a dropping of the table here as it raises this water out. Then if we have a flood that comes down the first of June, and lasts a day, a summer rain that flashes over the top of the surface, that would bring this hydrostatic head back up to full capacity?



(Testimony of Herbert C. Fletcher.)

A. I would say it wouldn't, no. There has been too much time elapsed. Dr. Thiele said sixty feet a year, and I think that figure is high.

Q. You mean it is high for the amount of progress water would make underground?

A. Yes.

Q. With relation to studies and scientific information on the matter, is there any generally accepted rate of movement? Of course, I realize it is in relationship to slope, is it not?

A. It isn't only relationship of slope. He used the figure ten thousand, which is a very conservative figure, I think.

There is its relationship of sedimentation. There is the relationship of porosity and [224] surface tension.

There are, oh, every so many different factors that come in there, when you start to talk about the amount of water, how fast this water is going to flow in this underground channel.

Q. Well, then, the water which is put in at the upper end at Bagdad, or which goes in, let me put it that way, from the standpoint of its coming out at the lower end, two or three miles down, it would be several years, perhaps, before it got there?

A. I would say in my examination of the channel—as I say, I only spent the day there, I didn't make any detailed examinations or borings, or anything like that, just from my experience in examining other channels throughout the southwest, and the type of material in there, I think Dr. Thiele's estimates were very conservative.

(Testimony of Herbert C. Fletcher.)

Q. That is with respect to the——

A. With respect to the movement, and so forth, through the channel.

Q. And to the amount of capacity?

A. That is right.

Q. Of the basin itself?

A. Of the basin itself.

The Court: We will suspend now until two [225] o'clock.

(Thereupon, a recess was taken until two o'clock p.m. of the same day.) [226]

\* \* \*

Wednesday, March 10, 1954, Two P.M.

HERBERT C. FLETCHER

resumed the stand and testified further as follows:

Direct Examination

(Continued)

Mr. Wilmer: Will you read the last question, please?

(The record was read by the reporter as requested.)

By Mr. Wilmer:

Q. Going back again to this loss of water through transpiration and evaporation, as I understand it, Mr. Fletcher, the figure which you arrived at as the average loss is the potential [227] loss which would be there if the area was wet with enough water to

(Testimony of Herbert C. Fletcher.)

supply the vegetation, and to be available for transpiration and evaporation?

A. Essentially, yes. I think that—well, for example, if the stream flow remained this high the year round, clear over during this period, then the evapotranspiration rate would be this amount. But the stream doesn't flow. It drops off, and this figure rises (indicating on chart).

Q. Now, what would the, or is there a distinction, if I may put it that way, Mr. Fletcher, to be ascertained here because of the abrupt change in the rate of evapotranspiration, and also the rather abrupt wasting of the stream itself? Does that have any significance with respect to the fact that in your judgment, I believe, the amount Bagdad takes from the stream would play little part in the summer dryness there?

A. Well, I don't think it would play a particular part, because the fact that the stream is dropping off fast here, you have got a period of, oh, two or three weeks there, if I get your question correct.

Q. Yes.

A. It may vary back and forth there, though, but, you see, the stream flow comes down here [228] so abruptly, and cuts off in here. This is just one you keep in mind. Too, I think if this was plotted on a longtime average, I don't think you would find this coming clear up in here. At least it has been my experience in most other areas throughout the state. It never comes up that high.

It usually comes up about here. You will have occasions like the 1951 flood, and the flood of August

(Testimony of Herbert C. Fletcher.)

in 1950, which was pretty general over this whole area, that conventional type storm covers large areas.

Those floods would bring this up a little bit. This 1953, flood, we had a fair flood in 1953, if you recall. Generally, there isn't anywhere near enough stream flow in here to supply this need.

Q. Now, would you say there is—this may not be a fair question, but from your observation of the area itself, I mean by that, eliminating any facts or figures, or anything else other than your general experience and knowledge by reason of the long years you have been in this game, from a mere visual examination of the type of stream, the type of material it flows through, the type of vegetation which you saw there, and the known characteristics of western streams, would it be your opinion [229] that in the summertime there would be a very large loss of water from the basin through evaporation?

A. Oh, yes, definitely so. In fact, well, as I said before, depending on this supply. But if this supply remains up anywhere in through here, it is going to be this amount, or essentially that amount.

Q. And the fact that the stream diminishes very rapidly, and at a time when the loss rises very rapidly, means there is a very brief period of time during which the water Bagdad takes would have anything to do with the substantial flow of the stream downstream?

A. I think so, because it is just at this critical point right here. You have got two factors that are



(Testimony of Herbert C. Fletcher.)

working against you, actually. The factor of diminishing stream flow, and the factor of increasing evapotranspiration.

Q. Supposing that you were to, by adding a comparatively small amount of water to the over-all summer picture there, I believe you testified that that would immediately within a few years tend to bring the vegetation further up into the channel, and create a corresponding loss?

A. Yes, yes. As Dr. Thiele pointed out this morning, if that water table rises—any water that [230] you put back in here, no matter how small the amount, is going to push this back. That is going to push the vegetation back here, which is going to increase the, which is going to come nearer to this point.

With this amount of streamflow, the evapotranspiration is way down in here, because you don't have the water to evaporate. (Indicating on chart.)

Q. If you could actually put some kind of container over that area, and contain the evaporation to measure it, you wouldn't find that much evaporation because the water isn't there to evaporate?

A. That is right. If the streamflow would maintain its level up in here, you would come to this point here.

Q. With actual water loss?

A. With actual water loss.

Q. Now, in the study of the probable loss of evaporation—



(Testimony of Herbert C. Fletcher.)

A. Just let me further illustrate that point with this other chart I showed you this morning.

This chart here, for example.

You see this is what will actually happen if the water was available. Actually, this [231] is what we have. (Indicating on chart. )

Q. Did we mark this in evidence?

A. Yes. This is Exhibit AA.

Mr. Wilmer: Let us have it, then, will you?

We offer in evidence Defendant's Exhibit AA for identification.

The Witness: I didn't know whether it was in evidence.

The Clerk: Defendant's Exhibit AA in evidence.

(Said document was received in evidence and marked Defendant's Exhibit AA.)

Mr. Morgan: Could I have a look at it?

Mr. Wilmer: Surely. I am sorry.

Mr. Morgan: We object to this as having no relation whatsoever to the question at issue. This pertains to an entirely different acreage, entirely different location.

The Witness: That is the average of all the state.

Mr. Wilmer: Wait a minute.

The Witness That is the average for the State of Arizona.

Mr. Morgan: Everbody knows there is evaporation.

Mr. Wilmer: The purpose of this, if it [232]

(Testimony of Herbert C. Fletcher.)

please the Court, is to show that the more water you make available, the more is used.

The Court: The more evaporation there is.

The Witness: The more you have available, the more that is going to be lost.

Mr. Morgan: There can't be any question about that either.

Mr. Wilmer: This is the relationship with transpiration from plants.

Q. (By Mr. Wilmer): I believe that is correct, is it not? A. Yes.

Q. And the solid curve demonstrates the fact that when your plants are growing and transpiring water, if there is ample water available, they will use it far greater than the amount they would use if it were not available?

A. As I said this morning, you have the three kinds of plants, hydrophytes, phreatophytes, and xerophytic types, and even the xerophytic types, they won't use as much as the hydrophytes or phreatophytes, but certainly they will use everything that is available, but they have to go dormant. That is why this is a potential line, and this is the actual line.

Q. All right, now, I would like to ask you [233] something further with respect to this basin there.

Do you know of any method by which it could be determined the amount of water which would be required to pass the Bagdad sump to get a certain net amount of water at the Zannaras point of diversion?

A. Well, from a practical standpoint, no.

(Testimony of Herbert C. Fletcher.)

Q. Tell us why?

A. The reason why you can't is because your streamflow is going to change, your vegetation cover is going to increase, and you have got to have ways of measuring all that.

You could measure the inflow into the basin and the outflow by years, but I don't think that would give you the picture, because you would have to keep measuring. And also your temperature changes and your humidity changes are all shown on this curve here, which wouldn't make it practical. You couldn't from a practical standpoint actually measure it.

I don't think you can say—I won't say it is impossible to do it, because it would be possible, but from a practical standpoint I don't think it would.

Q. Well, the amount of water which would be required to be put into the basin would vary in [234] relationship to temperature, would it not?

A. Temperature and precipitation.

Q. And humidity?

A. And humidity. The amount of vegetation cover.

Q. I believe it was your observation that the flood of 1951 fairly well denuded a substantial part of the smaller growths in the basin, which are not yet restored?

A. That is my observation. That is the way it appeared to me.

If you will examine the channel, now, there is quite a dense growth of willows occurring through this area here, young sprouts about this high that

(Testimony of Herbert C. Fletcher.)

have come up, I imagine, in the last couple of years.

In addition, down in this area, which is where most of your vegetation is, your bigger trees, and things of that type, which is an indication that this is where most of your water is, that is, the water remains here longer than it does up here, actually. (Witness indicates on Exhibit.)

Q. That would take almost a daily or weekly calculation, plus a survey of the area for growths of new vegetation, and larger vegetation, at least several times a year? [235]

A. Oh, yes. You would have to do that, more than that.

For example, in the Safford Valley when we measured the growth of the vegetation in Safford Valley, the U.S.G.S., they had these tanks they measured in tanks. They took tanks, and weighed those tanks.

I have forgotten the exact dimensions of them now, but they are about eight feet across, and they were about ten, twelve feet deep, and they were weighed daily for a period. I think the experiment ran for about six years.

Q. To determine the loss of water?

A. To determine the loss of the amount of water, amount of water loss from these phreatophyte type plants there, principally salt cedar and baccharis, which is a type of willow, and the cottonwood.

Q. Now, this figure that you have there, as to the



(Testimony of Herbert C. Fletcher.)

loss in evaporation over the basin, that represents an average over-all picture, is that the case?

A. That is right. Yes, you can't just tie it down to one particular location like this. This is an average, taking the average of precipitation for that particular weather station.

Q. For that area? [236] A. For that area.

Q. That is the reason, I take it, why you might go out there in July or August and find free running water when you theoretically wouldn't find it on the basis of a long-term investigation? A. Yes.

Mr. Wilmer: Cross-examine.

Mr. Morgan: Just take your seat, Mr. Fletcher.

#### Cross-Examination

By Mr. Morgan:

Q. I take it from your testimony that if the Bagdad and Zannaras had to depend merely upon the rainfall recharge from the Bagdad area, that there would be no living water there at all?

A. There would be very little, except during, possibly, as this chart that I show here, this little green area here, in along the latter part of February or March.

Q. Now, then, that means that the water comes from some other point, then, that is actually used?

A. Well, sure. Water, or most of the water that gets down in the desert originates in the higher elevations.

Q. From what source, do you know, does Bagdad [237] get its water at the sump? By that I



(Testimony of Herbert C. Fletcher.)

mean, is it from the rainfall in and about Bagdad, or is it from some other point?

A. Well, I think that it is a storage of water from other points. There is no question about that, along that entire channel.

The water that occurs as living isn't the surface runoff. It is the water that gets down into the basins all the way along, and gradually seeps into the channels.

Q. In other words, I take it it would be your view, if you could cut off all the water that comes down the creek at the Bagdad intake there, the point of diversion, that there would be no stream, no living stream just from the rainfall around Bagdad?

A. I think that is essentially correct, yes.

Q. Do you have any idea how much water comes down to the Bagdad point?

A. No. That is the testimony given by Doctor Thiele. I have no measurements of it.

Q. And that testimony, I take it, was limited to the amount of water that was shown in the gauge, that went into the sump, is that correct, into the Bagdad sump?

A. I guess that is correct. [238]

Mr. Wilmer: I think the testimony was in the record that it is the water that was shown as flowing out of the Bagdad sump.

Q. (By Mr. Morgan): Now, if there was no interference of water in this creek at the Bagdad sump, and all the water from up above flowed down

(Testimony of Herbert C. Fletcher.)

past that sump, you wouldn't say, would you, that that wouldn't create a stream that would be a living stream, both in wet weather and dry weather?

A. Well, judging from the figures, the measurements of the water that is passing the sump, I would say that there certainly would be times of the year when there is a possibility that there wouldn't be any water flowing over this point here, because of the high evapotranspiration potential that you have there.

Q. What months in the year?

A. Well, I would say from along in, oh, somewhere between April and October. Those are the high evapotranspiration potential months.

Q. In other words, if the whole flow came down, there would be nothing crossing the Kingman Crossing, you say?

A. No, I didn't say that. I said it would depend here, of course, it would depend on how much [239] water falls up here, the years that it falls up here, but I said it is a possibility that there wouldn't be any.

Q. That is true. I believe that in the year 1903, when there was a great drought, the whole creek went dry, before your time?

A. There are other years, others that are closer to my time. In 1947 there was a pretty good drought in the southwest.

Q. Would it surprise you to know in the year 1947, and that, by the way, was before the Bagdad began their pumping operations at their present

(Testimony of Herbert C. Fletcher.)

point from the river, that water constantly ran the whole year down the channel?

Mr. Wilmer: If it please the Court, I object to this arguing with the witness.

The Witness: I don't know about that.

Mr. Wilmer: I object to the form of the question.

The Court: The witness probably wouldn't be surprised at anything.

Q. (By Mr. Morgan): Now, in your evaporation figures, I take it that those are based both on subsurface and on the actual surface flow?

A. Evaporation figures. Well, of course, the [240] subsurface flow is a factor, that is, how close the ground water table is to the surface definitely affects the evaporation.

Q. What portion of the evaporation do you allocate to the underground waters, and what portion to the surface flow?

A. I don't allocate any. That is, I have to figure my evapotranspiration, I have to assume that the water is available, whether it is from ground water or surface water.

Q. To what extent available?

A. To the extent that it sets this curve (indicating on Exhibit).

Q. How close to the surface would that water have to be so that it could be evaporated?

A. From an evaporation standpoint alone, I think that it would be two to three feet.

(Testimony of Herbert C. Fletcher.)

Q. Below that point, the water probably wouldn't evaporate, or be lost?

A. I don't think the loss is too great below that, no.

Q. Then in determining your losses by evaporation, you, insofar as the underground flow is concerned, you cover only two feet from the surface down, is that right?

A. Evaporation alone? [241]

Q. Yes. A. Yes.

Q. Is that correct?

A. That is essentially correct.

Q. Well, then, you must allocate something, then, to the surface flow?

A. No, I don't consider the surface flow. I am considering the water available on the ground surface.

Q. That is the water from around Bagdad?

A. No, nothing to do with Bagdad.

Q. Well, you said so far as underground——

A. While I am figuring this curve here, what I am saying is, as to the general vicinity of Bagdad, that is the general area.

Q. But you didn't take into consideration the real source of supply of this water further north, then, up in the mountains?

A. That is not what I am talking about. You are talking about spring flow, and I am talking about moisture, available soil moisture available for evaporation.

(Testimony of Herbert C. Fletcher.)

Q. Then you didn't consider this flow of water at any time that came down from above?

A. No, no.

Q. But yet you say if that flow was allowed to [242] flow through, it wouldn't come down uninterrupted?

A. Well, I am saying that it wouldn't, because the potential here is high enough that it would evaporate the water that comes through.

You are confining it to this one little area. I am not. I have to look at it in a broad standpoint to figure the evapotranspiration curve.

Q. Well, in evaporation, as I understand it, the percentage of evaporation would be rather constant, wouldn't it? A. Definitely not.

Q. Well, now, just a minute.

That is to say, if there was a lake of ten acres, and another lake of 100 acres in the same locality, the actual percentage of inches of evaporation in any one month would be in all probability the same, wouldn't it? A. No, it would not.

Q. Why not?

A. Because it would depend on the depths of those lakes, the wind currents over those lakes, and several other factors that it would depend on.

Q. All right. Assume that the lakes were of the same depth, but of a different diameter, and that there was the same wind conditions? [243]

A. You are assuming a hypothetical situation now?



(Testimony of Herbert C. Fletcher.)

Q. You are an expert, couldn't you answer that? I would like to be informed.

A. You know experts can inform you on some things, and attorneys have to inform you on others.

Q. It is a fact, isn't it, that the percentage of evaporation would be just the same?

A. Well, no. Well, if you say that the conditions are exactly the same, yes.

Q. Yes.

A. But you never have a condition like that in nature.

Q. All right. Bring this situation into consideration.

Suppose that instead of, oh, we will say a thousand acre feet of water, or we will say 100 acre feet of water coming down this creek constantly, there came down this creek a thousand acre feet of water constantly?

A. You better put it at a thousand, because I think these figures show a hundred acre feet would put it around in here.

Q. Just assume, so that you can answer this question, assume that instead of a hundred acre feet coming down here constantly, you assume that [244] there is a thousand acre feet coming down here constantly. That is the assumption you take.

A. Yes?

Q. And the percentage of evaporation, we will say, oh, to make it easy, 20 per cent.

In the case of the thousand acre feet, 20 per cent of the water would be gone by evaporation—I mean

(Testimony of Herbert C. Fletcher.)

100 acre feet, leaving 80 acre feet of water to come down, isn't that right?      A. Well——

Q. Now, wait a minute. Whereas, if there was a thousand acre feet—I am using the same formula, 20 per cent, there would be a hundred acre feet of water coming down, is that right?

A. No; because your evapotranspiration rate is rising all the time during the summer months.

Q. But your percentage would have to be the same?      A. No; percentages aren't the same.

Q. Why not?

A. Because this curve here will—if, say, the thousand acre feet would put it up here, that is the amount of water if there was a thousand acre feet going down, this would remain the same at this point, but at this point it would be different. (Witness indicates on Exhibit.) [245]

Q. Just take your seat now. Maybe I don't make myself clear.

But wouldn't the situation be just the same as in the case of two identical lakes or ponds under the same conditions, with different amounts of water in them, the percentage of evaporation in each case would be the same, wouldn't it?

A. Well, you are talking of free water surface now?

Q. Yes.

A. With a free water surface, yes.

Q. Well, the same would apply, of course, wouldn't it, to the underground flow?

A. No; it wouldn't.

(Testimony of Herbert C. Fletcher.)

Q. If the conditions were just the same?

A. If they were ideal, but you would never get that. You say the conditions are just the same. You can't show me two places anywhere that are exactly the same in nature.

Q. I think you are avoiding the question I asked you.

A. I am just trying to put it from a practical standpoint, from the standpoint you can't assume anything unnatural like that.

Q. Well, you do assume it in all your formulas, don't you? [246]

A. Oh, no, I don't. Of course, I don't.

Q. They are based on assumptions?

A. No——

Q. That a certain tree will take up so much water, and that under certain conditions there will be so much water evaporated?

A. Well, you are doing it on a measurement basis, not an assumption basis.

Q. Well, what difference does it make?

A. In one case you have a figure that is tangible. The other isn't tangible.

Q. It all depends. You can surely answer this question; whether or not water that is allowed to escape here comes down this creek depends largely on the quantity of water, doesn't it?

A. Surely.

Q. That is right?                      A. That is right.

Q. If you put a large amount of water in and

(Testimony of Herbert C. Fletcher.)

it escapes down this creek, it will flow a long distance, it won't be all taken up by——

A. If you put a thousand acre feet in, we will say?

Q. Or even less, maybe. Let us just get it down as large or small.

If you put a fairly large flow of water, [247] or let a fairly large flow of water escape, and it comes down this creek, and it is big enough, taking a percentage of evaporation into consideration, and the time in which it will evaporate, the slope, the speed of the water coming down, and so forth, that water actually will flow farther than a smaller amount of water, won't it?

A. You are thinking of a constant head, or just a head like from a flash flood?

Q. No; I am not thinking about a flash flood. I am thinking about a regular constant head of water coming down.

A. All right; I will say it would go through continuously.

Q. Go through continuously? A. Yes.

Q. And the larger the amount of water, I presume, naturally the more gets down, and the farther it would go?

A. Yes; above the evapotranspiration point.

Q. Yes. Then if you put a smaller amount of water down there, it might or might not go except to a certain distance?

A. I think you have to admit that, sure.

Q. You think that is right?



(Testimony of Herbert C. Fletcher.)

A. I think that is right. [248]

Q. Now, the evaporation of a surface stream depends largely on the width and the depth of that stream, doesn't it?

A. You are talking about surface flow, now?

Q. I said a surface stream.

A. When you say stream, I don't know whether you mean the stream channel, or the flow of water.

Q. I mean the regular ordinary channel that carries the water.

A. You are talking about the water, now, and not the channel?

Q. Yes.

A. That is what I want to know. Okay.

Q. Now, isn't it a fact that the width of the channel of water, or the bed, whatever you want to call it, of water, and the depth of that water governs to a certain extent the evaporation?

A. Sure. The more you spread that water out the more evaporation there is.

Q. Yes, sir. Did you go over all this course that is involved?

A. I went up and down the channel. I didn't follow all up and down the living channel.

Q. Did you go to the Zannaras' point of diversion?

A. Yes. [249]

Q. How far down did you go?

A. We went down here to this crossing.

Q. The Kingman Crossing?

A. Yes.

Q. Did you observe the water channel? Let us



(Testimony of Herbert C. Fletcher.)

call it the water channel, so there will be no misunderstanding.

A. Yes. Only with the water in it.

Q. With the water in it, yes.

Mr. Wilmer: That is the surface water?

Q. (By Mr. Morgan): Could you give the Court any idea at the time you were there, which I think was Monday, how much water was flowing on the surface?

A. I haven't any idea how much was.

Q. You are an expert on those things. Couldn't you give us just an opinion?

A. You can't say, just to look at a stream of water, you can't just say how much water is flowing down there. That depends on the speed of the water, the depth of the water, the coefficient of friction between your rocks, how many rocks you have sticking out.

I couldn't answer that.

Q. Let us get it this way. From the point of the Bagdad diversion down to the Kingman [250] Crossing, if you observed that country, there is no feed of any kind or character going into this basin?

A. There is another side stream coming in.

Q. Except Boulder Creek?

A. That was the only surface water we saw coming in. I think there is a possibility, I think there is possibly some underground water coming into it. I don't know.

Q. I am talking about the surface now.

(Testimony of Herbert C. Fletcher.)

A. There was some water coming down Boulder Creek.

Q. That is a small amount?

A. That is a small stream, yes.

Q. The large flow, the principal flow came down through or past the Bagdad point of diversion, did it not?

A. Well, as far as I observed, the water was running through the—the whole diversion, the main channel runs right through it.

Q. You saw the sump there? A. Yes.

Q. Was that water running out of the sump down to the creek?

A. Yes, I believe it was.

Q. Did you happen to look at the gauge reading to determine the amount of water running at [251] that time?

A. No; I didn't take gauge readings.

Q. That sump is about 15 feet deep?

A. I don't know.

Q. Was there any water running around the sump at that time, or was it all running through the sump and down through the channel?

A. It was running down through the channel.

Q. All of it? A. As far as I could tell.

Q. There was no other surface streams alongside the sump that you saw there carrying water?

A. Not that I observed.

Q. Now, then, can you tell us the width of that water, and approximately the depth of that water as it ran out of the sump?

(Testimony of Herbert C. Fletcher.)

A. Oh, I would say it was between 75 and a hundred feet wide, something like that.

Q. As it ran out of the sump?

A. It was quite a channel. It is twice as wide as this room.

Q. We will say as it ran out of the lip of the sump.

A. I didn't see any lip of the sump there.

Q. The lower part of the sump?

A. It just runs out into the main channel, [252] the part that I observed.

Q. How wide was it there?

A. Well, I told you.

Q. You said the width of this room?

A. I said at least twice as wide as this room.

Q. That would be about 40 or 50 feet?

A. I would say the stream part was at least that.

Q. How deep was the water at that point?

A. That I didn't measure.

Q. Well, you observed the water?

A. No; I was not particularly concerned with that. I was concerned, my examination was concerned with looking at the vegetation conditions.

Q. You knew that flow of water continued right past the Kingman Crossing, and on down to what they call the Box Canyon?

A. No; I was not aware of that at the time I was there.

Q. You don't know about that?

A. My examination was to examine principally the vegetation character of the stream channel.

(Testimony of Herbert C. Fletcher.)

Q. Well, in the chart which I believe you assisted in preparing, or did prepare——

A. I prepared the evapotranspiration chart.

Q. Is it a fact that this chart shows that in [253] November, that is, in the month of November, now, from year to year in the month of November, that there would be water coming down the creek, more water than was being used up?

A. As far as this particular year is concerned, yes.

Q. This is intended as an average year, wasn't it?

A. No; the stream flow on there is one year, 1953. The evapotranspiration is an average.

You have two curves. This might be a little confusing to the Court. This curve is on an average. These curves are for the year 1953 (indicating).

Q. I see.

A. You see, I superimposed my curves, the curves I worked up from the other chart onto this.

Q. You don't know, then, what the situation would be in 1950, 1951, and 1952?

A. No; I would have to chart that. That would have to be charted. But I assumed that——

Q. I think we have in evidence here the rainfall record for 1953, don't we? And also the rainfall record in 1950 in the Bagdad area, for the months of October and November, 1950, and December, [254] 1950?

Now, from looking at that record, and assuming that Bagdad, we are talking about, pumped the same



(Testimony of Herbert C. Fletcher.)

amount of water they are pumping now, would you say whether or not there might be water running down the creek?

A. Well, I can say this, that there might be water running down the creek in 1950, because in August of 1950 I notice that you had 3.99 inches of precipitation, which is enough up in the upper part of the watershed that you would still have some of that draining out.

Q. You think, then, in the months of November, we will say, and October, there would be water down there?

A. I think there is a possibility, it is very probable, because if you will notice the stream flow record, or the precipitation records, which I don't know whether you have analyzed here or not, but the month of July is next to the highest, the month of July for 1950 is next to the highest month that you have on record.

Q. Well, presume now, to answer this question, if the records actually show that during all of the month of November, and up until at least the 23rd of November, there was no flowing water of any kind or character down at least as far as the Zannaras' [255] point of diversion, would you be able to give an estimate as to that in view of the chart you are looking at?

A. Those are conditions that are difficult to define, as to the precipitation record, but I am just basing my conclusions on the precipitation record itself.



(Testimony of Herbert C. Fletcher.)

Q. Do you have a ten-year chart somewhere?

A. For what? Precipitation?

This is an average for precipitation here.

Q. Does that include evaporation?

A. This is the evaporation here. (Witness indicates on Exhibit.)

Q. It includes both then. Looking at that chart, could you tell whether or not in 1950 there should have been water running down through here?

A. In November?

Q. Yes. A. I would say that there was not.

Q. That there was not?

A. I doubt if there would be over a long period of time.

Q. That is on the assumption, of course, that the water was being used?

A. No; I am saying it wouldn't have reached the [256] Bagdad sump.

Q. The Bagdad sump?

A. Of course not, because you haven't satisfied the soil moisture deficit up above, and the average precipitation in November doesn't——

Q. I thought we agreed on that, that so far as the Bagdad sump is concerned, it doesn't depend upon the Bagdad rainfall at all, but on rainfall farther north, isn't that right?

A. I am saying this: You asked me about stream flow now. You asked me a question about stream flow, and that is the one I answered you. I didn't answer your question about precipitation.

Q. I see your point. I think we are agreed on

(Testimony of Herbert C. Fletcher.)

that, that in no year, in no year would there be sufficient water, if the charge of the creek depended only on the Bagdad area upflow down the creek regularly, isn't that right?

A. No; I would say there might be a little in the winter period.

Q. Or when there is a big rainfall for awhile?

A. Or a flood.

Q. Or a flood. But ordinarily this stream depends wholly upon water that has its source, say, above that?

A. Essentially, yes. But, you see, you were [257] questioning me about stream flow, and you were talking about precipitation.

But if you will examine these records here, as far as the precipitation is concerned, you will notice that the months of August in 1950, and the months of 1946, which were two periods we had the highest precipitation on record in July, or in August, I should say—no; wait a minute. The one is in July, and the other is in August.

This is the highest one you have—no, in 1934 you have another one. That is about as high. So you see that precipitation can carry over, which I testified this morning, that that takes a month or two to get down from some of these lower elevations.

Q. Yes, sir. Would you be able to tell us from what source this basin is really filled with underground water?

A. Well, I think the major source is from the higher elevations.

(Testimony of Herbert C. Fletcher.)

Q. Yes. It is water that either escapes from the Bagdad sump——

A. No, no.

Q. Or gets around it in some way?

A. Well, I don't think that particularly. I think some periods of the year there is more water [258] there than the Bagdad sump would ever take.

Q. That is what I mean. It comes past the Bagdad sump?

A. Sure. There are periods of the year that it does.

Q. I take it for granted you made no finding as to whether or not there was any subterranean flow, or any underground flow at the point where the Bagdad has its point of diversion?

A. No; as I say, I didn't examine, I haven't examined the subsurface flow.

Q. You know that the bedrock comes to the surface at that particular point? You saw that, I suppose?

A. No; I didn't observe the bedrock coming to the surface there.

Q. Well, if the bedrock does come to the surface at that point, and all of the surface flow comes up to the Bagdad sump, you wouldn't be able to say, then, that there was any underflow?

A. If the case is such that somewhere up in here there is bedrock outcropping, I guess that is what this indicates here. I don't know. I am not familiar with that.

If you had something to force all the water over a bedrock point, something like this, [259] then you

(Testimony of Herbert C. Fletcher.)

would assume that as that water—of course, as soon as that water goes over that point, you know how water acts when you run it over a sieve?

Q. Yes, sir.

A. All right, that is what would happen, when you run it over the gravels.

Q. Now, assume——

A. Of course, if you are putting it that the bed-rock is right there above the sump, I didn't observe that.

Q. Assume for this question that beginning about the month of May since the year 1948, the Bagdad people have used all of the water that came into the sump from the north during the dry seasons, that is, exclusive of flash floods? You understand?

A. Yes.

Q. What effect over a period of months would that have on this underground water basin shown on this plat, Defendant's Exhibit N?

A. Well, I think if they used all of the water down in this point here, you are talking about this 200 acre feet now? You say there is 200 acre feet coming into the sump?

Q. Yes. [260]                      A. And they used it all?

Q. Yes.

A. Well, I think that would merely dry up this part of the basin. I don't know whether that would carry clear on down here or not.

Q. How long would it take to dry up the basin, do you figure?

A. That is a question I couldn't answer.



(Testimony of Herbert C. Fletcher.)

Q. Well, would it be substantially dried up during one season, say, over a period of five months?

A. No; I don't think it would.

Q. But it did tend from year to year to reduce it?

A. You see, the thing that occurs—I think Doctor Thiele brought it out this morning, as you reduce the hydrostatic head above, you reduce the speed that this water travels through here.

Consequently, as you get down toward this end of the basin, the water is going to go out much more slowly than it would if this hydrostatic head was——

Q. I think we understand that.

A. Of course, my feeling is that this is the area that shows there has been water, by the vegetation, that the water has remained close to the surface all the time right there. [261]

Q. There is some still down there?

A. And I think there is enough charging at this time of the year to recharge this back, because of the hydrostatic head that is put on.

Q. Referring back to this creek again as it runs through the yellow section portrayed in this map.

With reference to the boundaries of the yellow section, where does the creek run, that is, the surface water?

A. It meanders back and forth across in its channel.

Q. Does it generally run in the middle of the channel, substantially?



(Testimony of Herbert C. Fletcher.)

A. No; I don't think so. Let's see. Let's examine it. I presume this is the channel here?

Q. Yes. A. Right here.

Q. Some places it runs to one side, and some the other, is that correct?

A. That is right, from this picture.

Q. Now, it does run down the lowest point through this basin, doesn't it, along the lowest point?

A. I wouldn't say it absolutely had to, no.

Q. Well, you wouldn't say it was like the [262] Mississippi River, it would run up?

A. Yes; I think it would run up like the Mississippi River. It is the same kind of river. It carries sediment. This stream will meander here. The flood may come down and leave this part lower than the other.

Q. Isn't it a fact that, generally speaking, down through that territory that the land——

A. The stream is lower than the general slope?

Q. Yes.

A. You mean the stream channel is lower than this part here?

Q. Yes; generally sloping up on this side?

A. Yes; I think it would be two or three feet lower, something like that.

Q. Yes.

A. I don't think there is any depth. You would almost expect a little of that. That is only normal.

Q. Were you in the Courtroom today when your colleague, Doctor Thiele, testified to the amount of

(Testimony of Herbert C. Fletcher.)

underground water below the Kingman Crossing, and up to the Zannaras' point of diversion?

A. You mean yesterday?

Q. Well, I think today he testified to it, in which he stated, as I recall it, 150 acre feet of water from the underground water? [263]

A. I think I remember something like that.

Q. From Kingman Crossing to the Zannaras' point of diversion? Do you remember that testimony? A. I remember something of that.

Q. And he testified that the evaporation, that is, for a year, if there was that much water for a year, would amount to 250 acre feet. Do you remember that testimony?

A. Was it 250? I have forgotten just the exact figures myself.

Q. Yes; I took it down. Do you remember that testimony?

A. I was not paying much attention to that.

Q. Well, assume that he so testified. I wonder if you as an expert could explain where the Doctor got that additional 100 acre feet——

Mr. Wilmer: If the Court please, I object to counsel misquoting the testimony. The doctor testified to no such thing at all. He said there was 150 storage water——

The Court: Call the Doctor back if you want it. He is here.

Mr. Morgan: Doctor, did you testify——

The Court: Finish with this witness, first.

(Testimony of Herbert C. Fletcher.)

Mr. Morgan: I haven't finished with this witness. [264]

The Court: Finish him first.

Q. (By Mr. Morgan): Assuming that he did so testify, could you explain where he got that additional 100 acre feet?

Mr. Wilmer: I object.

The Court: You don't have to answer.

Q. (By Mr. Morgan): Now, then, the Doctor testified that it would be possible to put an underground tank of some kind, perforated tank, I think he said, across the creek at the Zannaras' point of diversion, and that ample water could be secured from the underground waters for the Zannaras Mill purposes. Did you hear that testimony?

A. No; I don't remember hearing anything about that part.

Q. Well, if he so testified, you, as an expert, and we concede you are, of course, could you tell us where would the water come from if there was only 150 acre feet going down in a year, and the evaporation amounted to 250 acre feet?

Mr. Wilmer: If it please the Court, there has been no such testimony. I don't know why counsel is wasting our time with a lot of stuff that doesn't have anything to do with this.

The Court: Yes. You can argue this with [265] the Court when the time comes. You don't have to argue with the witnesses.

Mr. Morgan: All right.

The Court: Is that all, now?

(Testimony of Herbert C. Fletcher.)

Mr. Morgan: Oh, yes; while you are on the stand, Mr. Fletcher:

Q. (By Mr. Morgan): Are you familiar with the tailings lake of the Bagdad Copper?

A. Just as I casually went by it.

Q. I presume you saw it, of course, from going by it, and also probably on this airplane trip you took?

A. Yes; I saw it from the air.

Q. You know, of course, what the rate of evaporation would be under your formula in that section?

A. Yes. You mean evaporation now. You are talking about this figure here, I presume? It goes up to 74—well, it goes up to thirteen, thirty-two hundredths, thirteen forty-five hundredths inches per month.

Q. What I want to find out is what would be the yearly evaporation from that lake at that altitude? How much a month, or how many inches for a year would you believe that would be evaporated off?

A. Well, the total evaporation for that area, I [266] believe, is 74 inches, wasn't it, free water surface? If you are converting that, you have to multiply that by 1.3, reduce it by 1.3, which is the Geological Survey figures for reducing it to free water figures. Of course, that would make a difference in the depth of that lake.

Q. Assume the lake is ten feet deep.

A. All over?

Q. That is the average depth, it has an average depth of ten feet, and that the evaporation rate would be 75 inches a year, could you tell us how



(Testimony of Herbert C. Fletcher.)

much water in gallons or acre feet would be lost in that way?

A. I think you could figure that. An acre foot is equal to how much water, in gallons?

Q. An acre foot is equal to—I think I have got it.

A. You want to transpose it to gallons. If you want to leave the inches of water, 74 inches is a little over six feet of water. When you transpose it to gallons, it is 382, something like that, gallons in an acre foot.

Q. Three hundred twenty-six thousand would be the closest?      A. That is good enough.

Q. That would amount to something like [267] two hundred thousand. You got the area, 100 acres surface, ten feet deep?

A. I am talking about one acre—I think in the testimony we have that there was 74 inches of water evaporated off of a free water surface, that is, in square inches.

When you transpose that into acre feet, why, that would be six acre feet from one acre, and if you want to multiply it by a hundred, that would be six hundred.

Q. Six hundred acre feet. And to get it into gallons, you would multiply that to make it an even number, by 326 thousand?      A. Yes.

Q. It would be something around 200 million gallons?      A. Somewhere near that.

Mr. Morgan: I believe that is all.

Mr. Wilmer: I have a few questions, your Honor.



(Testimony of Herbert C. Fletcher.)

The Court: We will have our afternoon recess.

(Recess.)

The Court: You may proceed. [268]

Redirect Examination

By Mr. Wilmer:

Q. Mr. Fletcher, I am handing you Defendant's Exhibit AB for identification.

I believe you stated that was a study or a chart which you prepared from the U.S.G.S. and the Weather Bureau records, in accordance with the accepted method of preparing those studies, related to the Bagdad area? A. That is correct.

Mr. Wilmer: We offer Defendant's Exhibit AB for identification in evidence.

Mr. Morgan: No objection.

The Clerk: Defendant's Exhibit AB in evidence.

(Said document was received in evidence and marked as Defendant's Exhibit AB.)

Mr. Wilmer: Just a couple more question.

Q. (By Mr. Wilmer): The probable loss from evaporation as reflected by the portion of the chart you prepared, I believe you stated related generally to the Bagdad area?

A. Yes. That is the one just handed me.

Q. Yes. And the blue line on the evidence, [269] which is Exhibit Y in evidence, if that loss were limited, the potential was limited solely to the area of the creek basin, by reason of the lower elevation,

(Testimony of Herbert C. Fletcher.)

and the large amount of trees and similar vegetation, in your opinion, would that loss be higher or lower, the potential?

A. You mean if it was just confined to this particular area here?

Q. Yes. A. Oh, I think it would be higher.

Q. Substantially?

A. Yes; I think it would be substantially higher, because you have a different type of vegetation.

Q. Now, counsel asked you with respect to loss by evaporation from a surface. And I believe you stated that below two feet, or in that neighborhood, the evaporation loss should not be large?

A. That is correct.

Q. Now, if you would take that similar—or take a surface for purposes of illustration, say, an acre, and over that acre you have a reasonably substantial vegetation growth, including mesquite, willows, and similar growth which has a moisture supply in the gravels below it, but below two feet; in your opinion, how would the loss, water loss [270] from those gravels compare from transpiration as against a free water surface?

A. Well, of course, that would make some difference as to the density of the vegetation.

But I would say for purposes of developing this curve, we use a three-tenths density figure, which if you look straight down, about three-tenths of the area is covered with vegetation.

If you say that, if you assume, well, for example, in the Safford area where the vegetation is closer to

(Testimony of Herbert C. Fletcher.)

an eight-tenths density, I think the transpiration from trees of, oh, moderate size, say, ten, fifteen feet, exceeds free water surface.

Q. Well, relating it back to the area as you observed it in the basin, and assuming that you have a type of situation there that has an average ten-foot gravel and sand basin, with a three-tenths average growth of the type you observed, how would the loss over that basin from transpiration compare with loss from a free water surface?

A. Well, on a three-tenths, in an area like you have down here in this lower part of the basin down here, it surely indicates to me that this area has ample water most of the year, all of the year, for that matter. [271]

I think it probably, oh, probably comes pretty close to, on our three-tenths density basis, would probably come, depending on the size of those trees, and all, that would probably exceed the free water surface.

Q. Then as you move up the basin toward the Bagdad sump where the vegetation becomes less heavy, and not as large, I take it it would tend to fall below the free water?      A. That is right.

Q. And that is the reason you have this curve of the evapotranspiration?

A. Yes; that is one of the things we have to take into consideration.

Q. Now, counsel asked you some questions with respect to whether, if you put more water in the

(Testimony of Herbert C. Fletcher.)

top end of the basin, you get more water out the bottom end of the basin.

Would you tell me what would be required as to the basin being fully carrying its capacity?

Let us put it this way. Would that occur until the amount of water flowing at the upper end equalled the evapotranspiration loss, that you would get as much out of the bottom as you would put in at the top?

A. You never get as much out of the bottom as [272] you put in the top until the evapo—until this potential is reached, if I get your question.

Q. Yes; that is right. If the evapotranspiration potential of the basin area is 100 acre feet, and you put in 100 acre feet, you get none out of the bottom?

A. That is correct.

Q. If you put in ten acre feet, you get out probably ten acre feet?

A. Somewhere near ten acre feet.

Q. But until the amount of charge or supply at the upper end balances the evaporation and transpiration loss, and seepage, and so forth, the amount you put in at the upper end is immaterial as to getting any out at the lower end, until that balance has been reached, is that correct?

A. Yes. Well, I think that is amply shown here, if you analyze this chart, if you look at the chart, from what it says, because you are putting in here 200 acre feet, and the evaporation and transpiration is actually taken out around 86 acre feet.

Q. Until you reach that point, water at the upper

(Testimony of Herbert C. Fletcher.)

end is merely released for the purpose of evaporation and transpiration?

A. That is right. [273]

Q. One other question.

I was not clear when counsel asked you as to whether you took into any account the water flowing from above Bagdad in your conclusions, as to what the water loss was over the basin, and in the area. Actually, what you were determining was the amount of water which would be lost over the basin, assuming that there was that amount of water in the basin, is that right?

A. I have to assume that.

Q. So actually whether there was any water in the basin or not is immaterial to your study as to what would be lost if water was there?

A. Actually in the basin the water drops down here below three or four feet, as far as evaporation is concerned; then you are not going to have as high evaporation as if it was in, say, two or three feet within the surface, and in view of that, then, this total, actually the total amount that will be evaporated is going to drop down somewhere in here. As long as you maintained it up to this point, and then decrease it, it is going to come down in here somewhere. (Indicating on Exhibit.)

Mr. Wilmer: That is all. [274]



(Testimony of Herbert C. Fletcher.)

### Recross-Examination

By Mr. Morgan:

Q. Mr. Fletcher, when you were up there last Monday, you did go down there as far as the Kingman Crossing? A. Yes; we did go down there.

Q. And you saw the water, the water flowing out of the sump, or by the sump, by the Bagdad intake, you saw that? A. Yes.

Q. You saw the water as it came down to the Kingman Crossing? A. Yes; I saw it.

Q. The water was running all the way down, wasn't it?

A. Well, sure. You are in this time of the year, right in here, in March. (Indicating.)

Q. But there is considerable evaporation, isn't there?

A. Not comparatively, no. Evaporation here is clear down in here.

Q. What would the rate be in March, what percentage? A. Oh, the rate is about 150.

Q. What do you mean by 150?

A. 150 acre feet a year. [275]

Q. But it did get down there, and was running at a pretty good volume?

A. That is a pretty fair sized stream running down here.

Q. Now, all streams, no matter whether they are large or small, of course, are susceptible to evaporation and transpiration if they have trees, isn't that

(Testimony of Herbert C. Fletcher.)

a fact?      A. That is right.

Q. And yet they continue to run and run and run?  
A. I don't say that.

Q. Why is that?

A. You can't say that they continue to run and run and run, because they don't.

Q. What I mean is that they are what they call live streams, notwithstanding that they are subject to evaporation?

A. A good many of the streams that are live streams don't run the year round on the surface.

Q. That is true, especially out in the southwest, we know that. But you take a stream, we will say, back in the plains country, that water is subject to evaporation?  
A. That is right.

Q. And subject to transpiration, isn't it? [276]

A. That is correct.

Q. And yet the water runs hundreds of miles continuously?  
A. That is right.

Q. Now, why is that? Why isn't it all used up?

A. I think that chart I introduced there for Bagdad as evidence, shows that, but I will show you another chart that points it out a little further. I didn't make myself clear on that.

Well, take Alpine, for example. I won't show this if you would rather not.

Take Alpine, for example. Here is the evaporation transpiration curve. You notice the precipitation is high during the summer. It almost exceeds the evaporation transpiration curve.

Consequently, the soil moisture storage is more in

(Testimony of Herbert C. Fletcher.)

here compared to this, and you have all of this in here available for stream flow.

Consequently, your streams run longer from this area than they do in this area, which from this chart introduced in evidence only shows a very small point right there available for stream flow.

Mr. Wilmer: What point are you pointing out now?

The Witness: These two points here. (Indicating.) This point here, and this point here. [277]

Mr. Wilmer: This point on your—I think it is Exhibit AB?

The Witness: That is the soil moisture storage. You are putting water back in the soil that was taken out during this period by the vegetation.

Q. (By Mr. Morgan): Could you illustrate where that point might be on this plot, Exhibit N?

A. No, because this is a general area. This doesn't confine it to this particular end.

Mr. Morgan: That is all.

Mr. Wilmer: That is all.

(Witness excused.)

Mr. Wilmer: I would like to recall Doctor Thiele.

HEINRICH J. THIELE

recalled as a witness by the defendants, having been previously duly sworn, testified further as follows:

Further Direct Examination

By Mr. Wilmer:

Q. Doctor Thiele, I hope I am not confused as to what the testimony was, but I would like to be sure what your testimony is. [278]

With respect to the amount of water which in your opinion, on your calculations, is available below the Kingman Crossing, and to the Zannaras Mill, was your calculation based on the amount of water lying in that basin and available for withdrawal at the lower end, without regard to the stream flow?

Do you understand my question?

A. No; I don't think so.

Q. What I wanted to know is this: On your calculation, if we shut off the water at this point here (indicating on Exhibit)——

A. The stream flow?

Q. The stream flow at that point here, and at that moment measure the water in the basin from that point to the Zannaras Mill, what would be your calculation as to the amount of water in storage in that basin?      A. One hundred fifty acre feet.

Q. Very well.

And applying the same tactics, if we shut off the water at this point, and at that moment measure the water from the Bagdad sump, or cut the water off to the Kingman Crossing, what amount of water would there then be stored in the [279] basin there?

(Testimony of Heinrich J. Thiele.)

A. Two thousand seven hundred acre feet.

Q. Did you attempt to testify as to the amount of water which in a year flowed down the stream at any given time, the full amount?

A. In 1953, 6,413 acre feet.

Q. By that I mean, Doctor, over the entire year?

A. Over the entire year.

Q. Do you have any way of calculating how much water moves in the entire stream bed—I don't mean underground, or anything else—I mean the entire amount of water?

A. In the stream bed, according to the gauge readings at the Bagdad station.

Q. Taking into account floods?

A. Only taking the gauge readings into account, 1953.

Q. What year are you talking about?

A. 1953.

Mr. Wilmer: That is all.

Mr. Morgan: Just a question, Doctor.

#### Cross-Examination

By Mr. Morgan:

Q. Didn't you state today in answer to counsel, and then in answer to my cross-examination, that the [280] portion of the stream below the Kingman Crossing, and up to Zannaras, according to your calculations, contained 150 acre feet of ground water in a year?

A. In a sheet 200 feet wide, 15 thousand feet long, and ten feet thick.



(Testimony of Heinrich J. Thiele.)

Q. That is for the year——

A. No; that is ground water storage.

Q. That is the storage?

A. That is the storage capacity.

Q. And your calculation was that water coming down this course would move at the rate of 60 feet, didn't you say?

A. I imagine that it could move like that.

Q. A year?                      A. In a year.

Q. Sixty feet a year. Then you also testified in answer to both questions of counsel and myself that the total evaporation loss in this section from the Kingman Crossing to the Zannaras point of diversion in a year would be 250 acre feet?

A. Yes; that is correct. We have in these 250 acre feet our take from the stream flow, with 6,400 acre feet, and the additional ground water storage of 150 acre feet.

Q. This is underground water you are talking about? [281]

A. Underground and surface water, both of them. The underground water and surface water, and the restorement of ground water by surface water.

Q. How could you store surface water?

A. The ground water that is evaporating is replaced by surface water again.

Q. I will confess I don't understand you, Doctor. We were talking about underground water. And you specifically stated, as I understand it——

A. Excuse me, sir. You cannot divide up ground

(Testimony of Heinrich J. Thiele.)

water and surface water in this area. You have surface water going into the ground. You have ground water rising out of the ground.

This is going in and out. All your subsurface and surface flow is one unit here.

Q. Well, in any event, there wouldn't at any time be over 150 thousand acre feet of both ground and storage—I mean underground and surface water in this area?

A. We have the surface water flow nearly ten months a year, according to the records, and only two months in the year we don't have a surface flow.

Q. I think it is seven months.

A. I asked you already before—this is a [282] scientific investigation I have done here, and I asked you before, do you have any gauge station readings of that area there?

You can answer in a scientific way only with scientific data, not with “seven months,” or things like that.

You have to prove with exact data from the gauge station readings what is the actual flow.

Q. What point of this 150 acre feet in your judgment now represents underground water, and what part surface water?

Mr. Wilmer: He can't answer that.

The Witness: That is the storage capacity, as you stated yourself. The 150 acre feet is the storage capacity between Kingman Crossing and Zannaras' point of diversion.

(Testimony of Heinrich J. Thiele.)

Q. (By Mr. Morgan): Well, the stream itself wouldn't—

A. It is not the storage, because the stream doesn't given any storage capacity. The gravels and sands, they have a storage capacity, and we are talking about the storage capacity of these sediments.

Q. So it would be the underground waters you are talking about?

A. Yes; we are talking about the [283] underground, and of the surface water, because the underground water is replaced by surface water.

As you say, it is seven months of the year, but you surely couldn't prove to me that every year you had only seven months surface water flow.

Q. But during that period it would be 250 acre feet lost in evaporation?

A. From ground water and surface water.

Q. Some of the surface water would run below, wouldn't it?

A. In one year. Not in the period of seven months. In one year.

Q. In one year?                      A. In one year.

Mr. Morgan: I think that is all.

(Testimony of Heinrich J. Thiele.)

### Redirect Examination

By Mr. Wilmer:

Q. Just a minute. I assume, Doctor, that the channel from the Kingman Crossing to the Zannaras Mill, from previous testimony, is pretty much the same as a container, is it not, it being a canyon-like formation, pretty much the same as if you put a trough down there with rock sides, is that right?

A. It is a trough with rock sides. [284]

Q. And then if you fill that trough with sands and gravels, it would hold a certain amount of water from the Kingman Crossing to the Zannaras' point of diversion?

A. Yes, sir.

Q. And you are speaking at the point where it would be full and not running over there would be 150 acre feet of that?

A. Yes. And what is happening there, you have also a lot of trees, cottonwoods, and so forth, pumping out.

Q. I just want to establish that that is your testimony as to the storage capacity?

A. Yes.

Q. And as that is lost by evaporation, the new water coming in keeps it filled?

A. Yes, sir.

Mr. Wilmer: That is all.

Mr. Morgan: That is all.

(Witness excused.) [285]

ERNEST R. DICKIE

called as a witness for the defendants, having been first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. Will you state your name, please, for the record?  
A. Ernest R. Dickie.

Q. What is your connection with the Bagdad Copper Corporation?

A. General Manager of the Bagdad Copper Corporation.

Q. How long have you held that position?

A. Ten and one-half years.

Q. You began at what time?

A. September 1st, 1944.

Q. How long have you been engaged in mining operations?

A. Well, I was born and raised in mines.

Q. How long have you been familiar with and engaged in operating mills, mills used for processing minerals?

A. I actually started to work in mills when I was sixteen.

Q. Since you were sixteen. What is your present age? [286]  
A. Fifty-two.

Q. Since that time, have you been entirely devoting your time, or devoting your entire time to mining matters?

A. The biggest portion of the time since I have been out of my own naturally has been with mining and mining matters.



(Testimony of Ernest R. Dickie.)

Q. Have you had occasion to operate many mills?

A. Yes, sir.

Q. Are you familiar with the mill that Mr. Zannaras has on his millsite?

A. Somewhat familiar, yes, sir.

Q. Over the past six or seven years, you have had some occasions to look at it, haven't you?

A. Yes, sir.

Q. I think it has been described in the record, so I will not go further with those questions that were asked in the previous hearing.

Can you tell me, Mr. Dickie, in the operation of a mill of the general size, characteristics, and capacity of that of Mr. Zannaras, if there is a recognized proportion of water which is required in proportion to the amount of ore put through the mill?

A. Yes, sir.

Q. And what is that?

A. That depends, of course, on types of [287] materials that are to be milled; the type of processor; and in speaking of Mr. Zannaras' Mill, which is classified as gravity concentration, about the minimum amount of water that would be required to operate that mill would be three tons of water to one ton of ore, or 25 per cent density.

Q. You say there is some difference according to the type of ore, and similar matters.

How much variation do you find by reason of—what would be the maximum and what would be the minimum, by reason of the differences in the ore, and similar matters?

(Testimony of Ernest R. Dickie.)

A. Different mill men have different ideas, with regard to making the maximum recovery. And it would average, I would say, from three to five tons of water to one ton of ore.

Q. But your minimum requirement would be three tons of water to one ton of ore?

A. Yes, sir.

Q. Do you know when Bagdad first began pumping from its present point of diversion in Burro Creek?

A. Yes, sir. Not the exact month.

Q. Well, approximately.

A. It was in late 1943.

Q. That was at the present point of diversion, with one pump? [288]

A. Yes, sir.

Q. And what was the capacity of that pump, if you know?

A. Reading capacity, 750 gallons per minute.

Q. And that pumping was conducted until there was a second pump added, I believe, for carrying excess water when the stream was running?

A. Yes, sir.

Q. When was that installed?

A. 1951, during the year 1951.

Q. So that since late in 1943, Bagdad has been pumping from the stream at its present point with a 700 capacity gallon pump?

A. Yes, sir.

Q. Mr. Dickie, do you have some pictures of the stream bed of Burro Creek below the point of diversion?

A. Yes, sir. These are older ones here.

Mr. Wilmer: I am going to ask that these be marked in two groups.

(Testimony of Ernest R. Dickie.)

Mr. Morgan: I might say this testimony has all been before the Court. I don't know whether the Court wants it again.

The Court: Some of those have been marked.

Mr. Wilmer: Some of these have been. These have not. These are different [289] pictures.

I am putting in the additional pictures to not encumber the record, but because of the fact that the type of the stream and the vegetation seems to be of consequence.

Will you mark them as one exhibit, if you will?

The Clerk: Defendant's Exhibit AC for identification. And Defendant's Exhibit AD for identification.

(Said documents were marked as Defendant's Exhibits AC and AD for identification.)

Q. (By Mr. Wilmer): Showing you Defendant's Exhibit AC for identification, I believe you previously examined these, didn't you?

A. Yes, sir.

Q. To avoid having you look at them again?

A. Yes, sir.

Q. Are you familiar—you are familiar, of course, with the creek from the Bagdad sump to the Kingman Crossing? A. Yes, sir.

Q. These pictures marked Defendant's Exhibit AC for identification, are they generally [290] representative of the condition of that stream in the fall of 1951, with respect to vegetation growth and similar matters?

(Testimony of Ernest R. Dickie.)

A. All but this. This one was taken in 1953.

Mr. Wilmer: With respect to the second group which has been marked Defendant's Exhibit AD for identification, may I ask permission at this time to withdraw the one which Mr. Dickie identified as the 1953 picture, and put it with the ones that are 1953 and 1954?

The Court: You may.

Q. (By Mr. Wilmer): Referring to Defendant's Exhibit AD for identification, will you state whether those are representations of the condition of the creek bed in the fall of 1953 and this spring? Or what years they do cover?

A. Now, I have two pictures in this group that were taken in June, 1952.

The balance of the pictures are in the fall of 1953, and the winter and early part of this year, 1954.

Mr. Wilmer: May these two which he has identified as being taken in 1952 be identified by the fact there is written on the back of them "June 12th, 1952"? [291]

Q. (By Mr. Wilmer): That is correct?

A. That is correct.

Mr. Wilmer: We offer the two exhibits, AD and AC for identification in evidence.

Do you want to look at those, Mr. Morgan?

Mr. Morgan: I think we ought to look at them.

These are down at the Kingman Crossing, all of them?

Mr. Wilmer: He can identify them if you want

(Testimony of Ernest R. Dickie.)

him to. I haven't attempted to. They are generally of the creek, not of the Kingman Crossing.

Mr. Morgan: We have no objection, as far as I can see.

The Clerk: Defendant's Exhibit AC in evidence.

(Said photographs were received in evidence and marked as a group exhibit, Defendant's Exhibit AC.)

Mr. Morgan: Could I ask a question on voir dire?

The Court: Yes.

Q. (By Mr. Morgan): Are those all below the Bagdad point? [292] A. Yes, sir.

Q. How far down do they go?

A. Well, the most of them are within the first half, and lie below the Bagdad. There is one in that group, though, that was taken down at Kingman Crossing.

Mr. Morgan: All right.

Q. (By Mr. Wilmer): These are representative of the growth there?

A. In that group they are all below.

Q. I say, these are representative of the type of vegetation and gravel beds immediately below the Bagdad sump? A. That is right.

Q. And do not reflect the growth at the lower end? A. No, sir.

The Clerk: Defendant's Exhibit AD in evidence.

(Said photographs were received in evidence and marked Defendant's Exhibit AD.)



(Testimony of Ernest R. Dickie.)

Q. (By Mr. Wilmer): Now, in a milling operation, Mr. Dickie, in the general Kingman area, I mean, the general Bagdad [293] area which includes the location of the Zannaras Mill, is there any particular advantage in milling at any particular time of the year?

A. Of milling in any particular time of the year?

Q. Yes.

A. No. Honestly, I wouldn't say that there would be. The only thing I could think of was in here, when you had ore available, and when you had water available.

Q. I am speaking with respect to the seasons of the year. Is there any advantage in milling——

A. No, sir.

Q. In the summertime, in distinction to the following spring?

A. No, sir.

Mr. Wilmer: Cross-examine.

### Cross-Examination

By Mr. Morgan:

Q. You testified fully in this case before?

A. Yes, sir.

Q. You testified fully before?

A. Yes, sir.

Q. Those pictures which you have introduced in evidence in this case, do those pictures show the [294] condition with respect to vegetation, about as they were, oh, several years ago?

A. I didn't quite get you, sir.

Q. I say, do they show the conditions as to vege-

(Testimony of Ernest R. Dickie.)

tation along this stream as they did several years ago?

A. No. In the first place, these pictures weren't taken with the idea of showing vegetation. Really, it was to show the condition of the stream and the stream bed. However, naturally, you do have several photographs there that show the condition as of the last year or so, in reference to vegetation.

In 1951 we had, as you know, several high water floods, you might say, going down the creek, and it pretty much cleaned all the smaller brush out, which has grown up again now.

Q. I notice in these pictures introduced in evidence that in some of the pictures, at least, the stream itself has decided banks on either side?

A. Yes, sir.

Q. And is that true generally all the way down to the Kingman Crossing?

A. Well, it depends on what you refer to as banks, how much of a bank.

Q. Oh, I mean two, or three, or four feet, [295] sometimes?

A. Yes, sir. I would say that the channel that the live water is flowing in now would average three or four foot below the surrounding surface of the valley.

Q. Yes?

A. In most cases, other than down toward the Kingman Crossing.

Q. That is where it hits the ground and spreads out?

A. Yes, sir.

(Testimony of Ernest R. Dickie.)

Q. When were these pictures taken?

A. They are all dated—two of them taken in June, 1952. The balance of them taken, in that one group, during the fall of 1953, and up to now, this year.

Q. In any event, they were taken before the streams stop running?

A. Sir?

Q. They were taken before the streams stop running?

A. Well, that depends on how you are putting the question.

When you say the streams stop running, when? What year? This year? Last year?

Q. No, at the time the pictures were taken. [295-A]

A. No. I don't quite follow you.

Q. Don't the pictures all show running water?

A. That is right.

Q. They were taken, then, while the creek was actually running, carrying running water below—

A. Below the diversion point of Bagdad, yes. That is the idea of taking those pictures.

Q. There are times, of course, when there is no water running in the stream below?

A. Below the diversion point right out of the pump, but within half a mile below, the water is running again, and that is what these pictures are to show.

Q. It comes up and drops again?

A. Yes, into the gravel.

(Testimony of Ernest R. Dickie.)

Q. And it appears again at the Kingman Crossing?

A. With the exception of a few holes along the creek.

Q. As far as you know, there always has been water at the Kingman Crossing?

A. Some water, yes, sir.

Q. Even during your pumping operations?

A. I never have seen it dry. I have been up and down there and across there many a time.

Q. What the situation is below that, do you know? [296]

A. Below the Kingman Crossing?

Q. Yes.

A. At any time that I have been below the Kingman Crossing at Zannaras' point of diversion, I have not seen it dry, but evidence here by pictures was introduced at one trial, I mean at one hearing, showing that it evidently was dry, but I didn't see it.

Q. Oh, yes. You have two pumps now, you say, down at your mill? A. Yes, sir.

Q. In the dry season, I take it only one of those pumps is used? A. That is right, sir.

Q. You get all your water from up above that comes down to the sump, don't you?

I mean, your source of water is a flow down the creek? A. Down Burro Creek?

Q. Yes, Burro Creek. A. Yes.

Q. That you catch in your sump, and you pump it from that pump up to—— A. Bagdad.

Q. Yes. Now, in certain seasons of the year, there

(Testimony of Ernest R. Dickie.)

is an amount of water that greatly exceeds [297]  
your pumping capacity?

A. That greatly exceeds, you say?

Q. Your pumping capacity. That is, there is a  
big flow down the creek? A. Yes, sir, correct.

Q. And that flow is when, during what months,  
generally speaking, does that flow run down the  
creek?

A. Well, during the late winter and early spring  
months there is—generally, the flow is a good deal  
larger than the amount that is required by Bagdad.

Q. Yes. And then in the summer months, in the  
dry months sometimes that flow is greatly lessened,  
and you use all of the water that runs into your  
sump?

A. All of the surface water. There have been  
times when we do use all of the surface water that  
would flow into our pump.

Q. Yes. That is in, generally speaking, what  
months?

A. Oh, it varies from year to year. I remember  
one year when it was late in May. Another year  
June. It seems to me it was in August one time.  
There was a shortage of water, and October another  
year was short. But that isn't true every year. [298]

Q. In the wintertime, when there is a large sup-  
ply of water, I take it you use the other pump for  
the purpose of keeping your lake filled up, your  
tailings lake?

A. The idea of that is when there is water avail-  
able running to waste, we do take on as much as we



(Testimony of Ernest R. Dickie.)

can pump, and the surplus of it is stored in our lake to carry us over dry season.

Q. That is used the year round, that lake is maintained the year round? A. Correct, sir.

Q. About what is the capacity of that lake in acres, if you know?

A. The surface area at this time, probably 100 acres.

Q. Some of it is very deep, I presume? And some is shallow? A. Correct, sir.

Q. And what would the average depth be?

A. I couldn't give you that figure. It would just be strictly an estimate. An estimate wouldn't be any good.

Q. To put it mildly, would it be around ten feet?

A. Yes, I would say it would be ten feet easy enough. [299]

Q. Possibly more than that. Then you keep in storage, I take it, at least a thousand acre feet of water?

A. Well, I would have to do a little calculating there, because the tailings are going into that same pond continuously at the same time, and that it does raise the level of the lake. I wouldn't want to answer the question whether we have got a thousand acre feet of water in there or not.

Q. Would you say approximately that?

A. I don't think I would even want to say approximately any figure. We know we have got quite a surplus of water, yes.

Q. If the lake were a thousand acres at the sur-

(Testimony of Ernest R. Dickie.)

face, and it average ten feet in depth, that would mean a thousand acre feet?

A. Correct. But here is the first thing. A big portion of that lake area tailing pond is tailings, not water, and when I said a hundred acres in area, I meant the whole tailing pond and water.

Q. Of course, the tailings also contain a lot of water, do they not?

A. Of course, there is no doubt but what they will hold moisture. [300]

Q. How many gallons of water would that be, a thousand acre feet? I believe you could arrive at that by multiplying it by 326 thousand?

A. Yes, somewhere in that neighborhood.

Q. Something over 500 million gallons, wouldn't it be?

A. I expect. I haven't calculated it out.

Q. About 325 million. That is correct, is it not?

You have quite a loss from that, then don't you, from evaporation?

A. Yes, we realize that there is quite a bit of loss by evaporation.

Q. Is there any method you could adopt——

A. Sir?

Q. Is there any method you could adopt up there that would save that water loss?

A. From evaporation?

Q. Yes. A. I don't know of one.

Q. Couldn't you use the filter system, the thickener system of saving water, as they do at many of the mines?

(Testimony of Ernest R. Dickie.)

A. That was used at Bagdad at one time, but we only recovered forty-four per cent of the water. And in the present method of sending the water out [301] in the pond, and taking into consideration the evaporation, we are saving 60 per cent of the water.

Q. On the other hand, you are losing about 75 per cent every year?

A. You are going to lose it off of thickeners just the same as by evaporation, only you don't have as big an area.

Q. You run the water back into tanks and thickeners, don't you?

A. We don't use any thickeners now.

Q. But you did when you used them?

A. In the beginning, yes, sir.

Q. I guess you are familiar with the Castle Dome operation, where they use the thickener system to save water from evaporation?

A. I am.

Q. And other mines in this state?

A. Sure.

Q. It would be possible to save a good deal of water that way?

A. We wouldn't save water, no, sir, not over what we are doing.

Q. Not if you turn it back into the lake again?

A. Sir?

Q. It wouldn't save it if you turned it back into an open lake? [302]

A. Maybe you don't understand what the thickener does.

The thickener is a settling pond, you might say.

(Testimony of Ernest R. Dickie.)

Q. Yes.

A. And it has mechanical means in the bottom that settles the mud to one location, and that mud is pumped down forty-five to fifty per cent solids. That is about as much as you can possibly condense it, and when that is discharged, the balance of the water in that tailings is lost through evaporation, and also through the evaporation that is on the surface of the thickeners.

Q. Are you familiar with what is known as hydroseal pumps used in connection with thickeners?

A. I know what hydroseal pumps are. We use them.

Q. Are you familiar with this information they put out as to how to save water by using thickeners?

A. We have loads of that type of information.

Q. This is a very picture of your tailings pond, isn't it?

A. Of our tailings pond?

Q. Yes. A. No, that is Castle Dome.

Q. Are you familiar with that? [303]

A. Yes, sir.

Q. They use the thickener system down there?

A. Yes, sir.

Q. Do you know what their recovery of water is?

A. Well, I have a report on it that it recovers—I don't just recollect, but their actual recovery was less than what we are getting.

Mr. Morgan: I think that is all, sir.

(Testimony of Ernest R. Dickie.)

### Redirect Examination

By Mr. Wilmer:

Q. Ernest, I am going to show you an exhibit previously introduced in this case, Plaintiff's Exhibit Number One, which is a series of reports as to the gauge readings at Burro Creek.

Counsel asked you some questions with respect to the times of the year when water went by the Bagdad sump. These are the actual records of the amount of water discharged past the sump through these periods, is that correct? A. Yes, sir.

Q. So that the times when water was discharged past the sump, and the amount, is reflected by Plaintiff's Exhibit One in evidence in this case?

A. Correct, sir.

Mr. Wilmer: That is all.

Mr. Morgan: That is all.

(Witness excused.) [304]

Mr. Wilmer: I would like to call Mr. Zannaras for cross-examination, for a few questions.

### JOHN PHILLIP ZANNARAS

called by the defendant as an adverse witness for cross-examination under the statute, having been first duly sworn, testified as follows:

### Direct Examination

By Mr. Wilmer:

Q. Your name is John Phillip Zannaras?

A. Yes, sir.



(Testimony of John Phillip Zannaras.)

Q. Are you one of the parties to this case, Mr. Zannaras?           A. Yes.

Q. Mr. Zannaras, when was the last time that your mill was operated?

A. Some time in 1952.

Q. In 1952?           A. Yes.

Q. And for how long a period?

A. Well, we worked for about six months or eights months, something like that. I don't remember the exact time, six or eight months, about.

Q. When did you begin operating?

A. It may have been in January, something like that. [305]

Q. Of 1952?           A. Something like that.

Q. That is the mill, now, on Burro Creek?

A. Yes.

Q. What type of ore did you put through it?

A. Tungsten.

Q. What was done with the concentrates?

A. We sold them. That is all in evidence here.

Q. I am sorry. I am getting behind myself. That occurred prior to the other trial of this matter?

A. Yes.

Q. I am sorry. I didn't mean it that way. I meant since the last hearing of this has the mill been operating?

A. When was the last hearing?

Mr. Morgan: Two years ago. 1952.

Mr. Wilmer: May of 1952.

The Witness: We were operating after that.

Q. (By Mr. Wilmer): Pardon?

(Testimony of John Phillip Zannaras.)

A. We were operating after May, 1952, I think after September.

Q. Do you recall that you were or were not?

A. I am not quite sure about the dates. [306]

Q. You had records of the place to which the concentrates were shipped?

A. We ordered this put in evidence here, whatever they are.

Q. I am speaking of any operation after that time.

A. No, we have no operation after that

Q. After the trial? A. No.

Q. You have none. Have you begun the construction of a new mill? A. Yes, sir.

Q. And where is that located?

A. Well, the new mill is part of—I don't call it a new mill. It is an addition to the other mill.

Q. I understand. Where is that located?

A. It is located at the mine.

Q. And the mine is approximately how far from the creek? A. About ten miles.

Q. Your mine is approximately ten miles from the Burro Creek? A. Yes, sir.

Q. And this new mill that you are constructing there is approximately ten miles from Burro Creek? [307] A. That is right.

Q. What is your source of water for that mill?

A. We going to grind it and dry it and transport it to Burro Creek for separation down there.

Q. You are going to grind it there at the mine?

(Testimony of John Phillip Zannaras.)

A. At the mine, and transport it and concentrate it at Burro Creek.

Q. The mill is actually several miles from the mine?  
A. No, not several miles.

Q. The mill which you are presently constructing?  
A. Yes.

Q. Is approximately two miles from your mine, is it not?

A. It is right in the mine. It is right in the mine, next to the mine. The new mill is next to the mine.

Q. Within what distance, in feet?

A. About fifty feet.

Q. Is that the only new construction which you have in that area?  
A. Oh, no.

Q. You have some additional construction that is a couple miles away from the present mine headquarters? [308]

A. No. Well—what do you mean, construction? New construction, you mean?

Q. Well, now, referring, Mr. Zannaras, to the shaft of your mine that we have referred to before?

A. Yes.

Q. I believe it is around that that you have constructed some of your dwellings, these buildings?

A. Yes, a camp.

Q. At the shaft?

A. A camp, a mining camp.

Q. A camp, that is right?  
A. Yes.

Q. Now, from the shaft to the mine to this new mill is how far?  
A. A mile and a half.

Q. A mile and a half?  
A. Yes.

(Testimony of John Phillip Zannaras.)

Q. You are going to load the ore at the shaft and transport it to the mill?

A. I got ore next to the mill. We got ore next to the mill.

Q. What?

A. We got ore next to the mill. The big deposit is next to the mill.

Q. What I am getting at is, you propose to [309] load your ore at the shaft at the mine?

A. No.

Q. You are abandoning that, are you?

A. No, we are not abandoning it. We got that property—that property is almost two miles long, and that property extends all the way up to the shaft, and we have different workings, different parts of the property. The main object for that, we are going to mine by open pit next to the mill, which is about a few feet away.

Q. In other words, you are opening a new——

A. No, we don't open a new——

Q. Pardon me. You are leaving the existing workings in shaft——

A. No, we don't.

Q. Pardon me. You are starting your open pit operation about a mile and a half from the old shaft, is that correct? The open pit you are talking about that is next to the mill is a mile and a half from the camp and the shaft?

A. There are many workings in between the mile and a half.

Q. You propose to mine that open mill and grind it dry?

A. Yes, grind it dry.

(Testimony of John Phillip Zannaras.)

Q. And then load it and haul it to the mill [310] and mill it there? A. Yes.

Q. And then haul it back, haul it in to the mill-site?

A. No, the concentrates we will haul back.

Q. You have had no operation of the mill at all since the last trial? A. No.

Q. There has been ample water at all times, has there?

A. No. Well, there has been water there, yes.

Mr. Wilmer: That is all.

Mr. Morgan: Just a minute, Mr. Zannaras.

Q. (By Mr. Morgan): What have you done, if anything, at the mill down at the river?

A. We put in new—we are doubling the capacity. We are just putting new tables on with the foundations, and we put new elevators. And we want to double the capacity down on Burro Creek, and we are going to put in flotation also.

The Court: We will suspend until ten in the morning.

(Thereupon at 4:30 p.m. an adjournment was taken to the following morning, March 11, 1954, at 10 o'clock a.m.) [311]

Thursday, March 11, 1954—10 A.M.

Mr. Wilmer: Mr. Zannaras, will you take the stand again?



## JOHN PHILLIP ZANNARAS

resumed the stand and testified further as follows:

## Direct Examination

(Continued)

By Mr. Wilmer:

Q. Mr. Zannaras, subsequent to the last hearing, you learned of the fact that Bagdad had filed an application for a permit to construct a dam above their point of diversion to store flood waters, did you not? [312]

A. Will you repeat the question?

Q. Subsequent to the last hearing, you learned that Bagdad Corporation filed with the State Water Commissioner an application for a permit to construct a dam in the rocky canyon above Bagdad sump to restore flood waters, did you not?

A. I did know about it, but at the time I learned it—I don't know whether it was correctly stated in your statement as to the time I learned it.

Q. You have learned about it?

A. I have, but I don't know whether it was that time.

Q. Immediately subsequent to that, you filed with the Land Management Division of the Department of the Interior an application for a reservoir site?

A. No.

Q. Pardon me. Did you file an application for a reservoir site subsequent to that?

A. I did file. Whether subsequent or prior, I do not know.

(Testimony of John Phillip Zannaras.)

Q. Where did you get the survey that you used to describe the reservoir which you proposed to construct?

A. I went up there myself.

Q. Did you survey it yourself? [313]

A. Yes, I went up there myself.

Q. How did it happen that your survey followed exactly the survey of Bagdad?

A. Because it was the only place. I didn't know Bagdad surveyed that.

Q. Mr. Zannaras, you have a water right of 3 million gallons per year?

A. That is right.

Q. Why did you file an application for a reservoir site some 12 miles above your point of diversion, for 3 million gallons diversion use?

A. Well, this is——

Q. Why did you file it?

A. Because we have bigger plants to be constructed there, a big mine.

Q. You have a 3 million gallon a year water right; did you propose to store your 3 million gallons above your point of diversion?

A. What was my subsequent plans have nothing to do with it. It was for a right of way.

Q. As a matter of fact, Mr. Zannaras, without arguing about it——

A. Yes.

Q. You did file an application for a reservoir permit?

A. No, I did not. [314]

Q. Pardon me. Will you please let me finish the question. You did file an application for a reservoir permit which followed almost to a "T" the application of Bagdad Copper Corporation, did you not?

(Testimony of John Phillip Zannaras.)

A. No, I did not. I filed application for a right of way.

Q. Well, it is known as a reservoir permit, is it not? A right of way for a reservoir?

A. No, it is not a reservoir permit. It is a right of way.

Q. It is a right of way to construct a reservoir?

A. Yes.

Q. And it followed exactly the application of Bagdad? A. No, it did not.

Q. Where did it depart from it?

A. What?

Q. Where did it depart from it? Where did it change? A. Everywhere.

Q. Pardon?

A. In every place. It was not the same thing at all.

Q. Well, in any event, Mr. Zannaras you [315] realized that Bagdad desired to store the flood waters so that there wouldn't be any conflict with your use below, did you not? A. No.

Q. How much more time would be required to complete your mill at the mine site where you have the mine?

A. Well, it is practically completed.

Q. And what have you got installed at the present time? A. At the mine?

Q. At the mine.

A. Well, we have an ore bin. We have a crusher. We have a belt conveyor. We have five elevators. We have four vibrating screens.

(Testimony of John Phillip Zannaras.)

Q. Are those all installed and ready to operate?

A. All installed and ready.

Q. All right.

A. We have three large crushing rolls.

Q. How much time will it take to complete the installation?

A. It is completed practically.

Q. Ready to operate?

A. It won't take very long. Power is what we need. [316]

Q. What is your source of power going to be?

A. A Diesel engine.

Q. A Diesel engine. Do you have the engine?

A. Not yet.

Q. What is the capacity of that mill?

A. About 250 tons, from 250 to 500 tons a day.

Q. I understood you to say that you intended to double the capacity of the mill also at the Burro Creek location?

A. Yes.

Q. That will be only for the treating of the powdered rock after it has been ground?

A. Yes.

Q. Now, do you intend to operate your mill at the mine at capacity?

A. Yes, I mean to operate at capacity if we can.

Q. You intend to mill 250 tons a day?

A. That is right.

Q. And run that through the mill down at the creek then?

A. Yes.

Q. To concentrate it?

A. Yes.

(Testimony of John Phillip Zannaras.)

Q. Where are you going to get the water [317] for that, Mr. Zannaras?

A. There is plenty of water in Burro Creek.

Q. There is plenty of water in Burro Creek?

A. We want to get a different right besides that for the water in Burro Creek.

Q. Where are you going to get the water in the summertime?

A. We got water all right for summertime.

Q. 250 tons a day would take approximately 750 tons of water, would it not?

A. No, it would not.

Q. How much would it take? A. 250 tons?

Q. Yes.

A. I can get that with about 60 tons.

Q. 60 tons of water? A. That is right.

Q. Do you know of any mining operation that can mill——

A. Yes, I do. I can show it to you.

Q. All right, let me see it.

A. On page 20-13 of Handbook for Mineral Dressing, by Taggart, it is shown that at the Eagle Picher, Ruby, it is a flotation method and runs 400 tons of ore per 24 hours, and a total recovery of water, 95 per cent. That is on 400 tons of ore [318] in twenty-four hours, only 40 tons of water.

Q. May I see that, please?

A. Yes. (Handing to counsel.)

Q. This figure that you have given us, Mr. Zannaras, is I think 95 per cent recovery of the water, is it not? A. That is right.



(Testimony of John Phillip Zannaras.)

Q. So that you would have to install filters. Actually, you are using 40 tons, but recovering and re-using the water?

A. We have a thickener there. We do have the facilities. I have tanks there.

Q. Do you intend to recover and re-use the water at the mill? A. Yes.

Q. At the millsite at Burro Creek?

A. Yes.

Q. Is that all set up to go?

A. Practically, yes.

Q. To handle 250 tons?

A. Well, right now, no, but we are practically ready.

Q. Where are these installations that you speak of at the millsite?

A. On Burro Creek, it is a thickener.

Q. A thickener to handle 250 tons? [319]

A. Yes.

Q. Then I take it that you propose to re-use the water, is that right? A. Yes.

Q. You are going to get by on 3 million gallons per year, handling 250 tons of ore a day?

A. Yes, I can do that.

Q. Why was the mill constructed where it is, Mr. Zannaras? At the mine, instead of down at the creek?

A. Because that is where the water is.

Q. Why wasn't the mill constructed down at the creek where the water is? A. The new place?

Q. Yes. A. Do I have to tell you that?

(Testimony of John Phillip Zannaras.)

Q. I would like to know.

A. It may be some secret of mine. I may have some secrets there that I may not have to tell you.

Q. Why? I would like to have the reason.

A. Because I can use it for other minerals there that don't require water, and then you can mill them up there.

Q. You propose to haul the powdered ore——

A. Yes.

Q. ——to the mill at Burro Creek? [320]

A. That is right.

Q. That road down to Burro Creek is a sandy wash, is it not?

A. No, it is a very good road.

Q. Mr. Zannaras, that road is one you even have trouble getting through with a truck at times, do you not?

A. No, I don't.

Q. I did.

A. Well, you are probably a bad driver.

Mr. Wilmer: That is all.

Mr. Morgan: Just a few questions, Mr. Zannaras.

#### Cross-Examination

By Mr. Morgan:

Q. How much money——since the trial of that action——

A. Yes.

Q. In, I think it was May, 1952, how much money have you actually spent up at the mine?

A. That was about \$100,000.

Q. That included the building of this crushing mill?

A. Yes, sir.

(Testimony of John Phillip Zannaras.)

Q. And the installation of the other equipment?

A. That is right. [321]

Q. Did you do any other work in the way of development?

A. Yes, we developed the shaft to 200 feet.

Q. Did that add to your ore resources?

A. Yes, it did.

Q. I believe you testified fully as to the ore that was developed?           A. Yes, sir.

Q. At the prior trial?           A. Yes, sir.

Q. Has there been any change in the values of that ore?

A. Well, it is a better ore at the shaft. We get a richer ore at the shaft.

Q. I don't know whether you testified to the value of the pit ore?           A. I already testified to it.

Q. You did?           A. Yes, I did.

Q. Do you remember the amount?

A. Yes. It runs about 18 to 20 dollars a ton.

Q. What about the ore in the shaft?

A. The ore in the shaft runs from \$60 down to \$40.

Q. What is the extent of the bodies that have been developed in the shaft? [322]

A. As far as I know, we find ore all the way down to the bottom of the shaft.

Q. In what widths?

A. Almost the entire width of the shaft.

Q. How wide is the shaft?

A. Oh, it is about six feet, the ore part.

(Testimony of John Phillip Zannaras.)

Q. Now, then, what money have you spent on the mill at the creek?

A. At the creek we spent about \$10,000.

Q. What will be the capacity of the mill at the creek when you finish your present installations, the ones you expect to put on presently?

A. We are going to start with 160 tons and go up to 250 tons.

Q. Now, you were asked whether or not you did any milling down at the creek after the trial of the action in May, 1952?

A. Yes, sir.

Q. Have you looked up your records on that since?

A. Yes, I checked up, and we milled up to June, 1952.

A. Why did you quit?

A. Well, the water started being low again.

Q. Then after June, 1952, up to the present time, you have been developing the mine? [323]

A. Yes, sir.

Q. And doing some work on this mill to enlarge it?

A. That is right.

Q. And you have made changes, I take it, on the mill?

A. Yes, just making for a recovery—we found quite a few points we are going to increase the recovery of the tungsten considerably.

Q. I believe you have already testified as to how the water runs down the creek to your point of diversion?

A. Yes, I did.

Q. When it is not being pumped out above?

A. Yes.

(Testimony of John Phillip Zannaras.)

Q. I don't want to go back into that.

A. All right.

Mr. Morgan: I guess that is all. I believe that is all.

Redirect Examination

By Mr. Wilmer:

Q. One question. What happened to the product of your milling until June, 1952?

A. I think we sold it.

Q. Do you know who you sold it to?

A. To Kennametals Company. [324]

Q. How much did you get for it?

A. I don't remember.

Q. Do you have any records of how much money you have actually realized from any milling operations there?

A. Yes.

Q. Do you have any records?

A. Yes, we have records.

Q. Where are they?

A. Up at the place, in the mines.

Q. What do they consist of?

A. The returns. They sent us a return.

Q. Do you have an actual book which shows the amount of concentrate sold and the price for it?

A. We may have the returns.

Q. Do you have a record to keep track of what you get from selling concentrates?

A. I may have.

Q. Don't you know?



(Testimony of John Phillip Zannaras.)

A. Because we were reorganizing at the time. We were reorganizing the company.

Q. What did you use for making out income tax returns?

A. We have got records.

Q. You have got records which show just what you are taking in from your operations? [325]

A. It was just testing operations, don't forget that. It is just testing.

Q. You were testing since 1942? That is in substance what you have been doing up there, testing and developing new mines?

A. We were developping the mine, and I built a big mill up there now, and it takes time.

Q. Your mill at Burro Creek has been ready to run since 1942, has it not?

A. Ready to run?

Q. Yes, been ready to operate since 1942?

A. I told you we developed the mine. The mill was ready to receive ores.

Q. Since 1942 the mill at Burro Creek, according to your testimony, has been in a condition to operate, has it not?

A. Yes, it will operate.

Q. Since that time you have continued to revise the mill and open new mining bodies, but have done no mining, substantially?

A. Well, substantially, there is nothing.

Mr. Wilmer: That is all.

Mr. Morgan: That is all.

(Witness excused.)

Mr. Wilmer: I would like to recall Mr. Dickie for a brief question or two, your Honor. [326]

May this be marked for identification.

The Clerk: Defendant's Exhibit AE for identification.

(Said document was marked Defendant's Exhibit AE for identification.)

Mr. Morgan: Could I ask some questions on this?

Mr. Wilmer: This, if the Court please, is the exhibit Dr. Thiele testified as having prepared. It shows the average gauge readings for 1953.

Exhibit X was marked for identification. I see I did not think to offer it. I am offering it in evidence on the basis of the predicate previously laid. The previous gauge readings are in evidence from the previous hearing.

And I am now going to offer for your further information the daily gauge readings for 1953, which will take care of your objection that that is the average.

Mr. Morgan: Well, that is all right.

Mr. Wilmer: We offer Defendant's Exhibit "X" in evidence.

The Court: All right.

The Clerk: Defendant's Exhibit X in evidence.

(Said document was received in evidence and marked Defendant's Exhibit X.) [327]

## DEFENDANT'S EXHIBIT X

Bagdad Copper Corporation  
Bagdad, ArizonaAverage Monthly Flow Gauge Readings  
Burro Creek

Month	1949	1950	1951	1952	1953	Average 1949-53
Jan. ....		.419	.436	1.119	.590	0.641
Feb. ....		.432	.423	2.238	.507	0.800
Mar. ....	1.929	.400	.384		.539	0.813
Apr. ....	.573	.318	.367		.500	0.439
May ....	.277	.157	.269		.400	0.277
June ....	.180	.000	.000		.133	0.078
July ....	.000	.097	.098	.294	.352	0.168
Aug. ....	.000	.110	1.512	.329	.594	0.509
Sept. ....	.107	.155		.270	.230	0.191
Oct. ....	.107	.045		.413	.207	0.193
Nov. ....	.350	.040		.510	.640	0.385
Dec. ....	.432	.334		.587	.503	0.464

Admitted and filed March 11, 1954.

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## ERNEST R. DICKIE

recalled as a witness for the defendant, having been first duly sworn, testified further as follows:

## Further Direct Examination

By Mr. Wilmer:

Q. Mr. Dickie, I didn't ask you to identify the monthly and daily gauge readings for 1953, and I am now handing you Defendant's Exhibit AE for identification, and ask you if that is the record of Bagdad, the monthly and daily gauge readings for 1953?

A. Yes, sir.

Mr. Wilmer: I offer Exhibit AE in evidence.

(Testimony of Ernest R. Dickie.)

Mr. Morgan: I guess the gauge readings have already been testified to.

Mr. Wilmer: 1953 wasn't.

Mr. Morgan: All right.

The Clerk: Defendant's Exhibit AE in evidence.

(Said document was received in evidence and marked Defendant's Exhibit AE.)

Q. (By Mr. Wilmer): Now, Mr. Dickie, the water supply referred to, the water supply handbook referred to by Mr. Zannaras, specifically referring to the Eagle Picher, Ruby, are you familiar with operations such as are indicated that were carried on at that point? [328]

A. Yes, sir.

Q. Do you know of any such operation which is in use in the country today?

A. Actually, I don't know of an operation running today using, or employing that process.

Q. Do you know of some that did employ it in the past?

A. Yes, sir, I visited this mine at Ruby when it was in operation.

Q. Is it in operation now?

A. No, sir. And there was another one at the foot of Yarnell Hill that used the same method of recovering water.

Q. Why has that use been abandoned?

A. Costwise, mainly. It costs a good deal more to mill a ton of ore and employ the use of thickeners and filters, and the disposal of the tailings and

(Testimony of Ernest R. Dickie.)

in most operations where they have kept accurate cost records, it shows that the cost is more than in the methods used today.

Q. Now, I notice this refers to tons of water in circuit per ton of ore? A. Yes, sir.

Q. In the operation it requires, then, how many tons of water in circuit per ton of ore being milled? [329]

A. Well, as that table shows there, they have to have two tons of water per ton of ore in the circuit at all times. In other words, if that is a 400 ton plant, that would be 800 tons of water in the circuit. And in the circuit means all through the process, agitators, thickeners, flotation equipment, everything that would have the water in it.

As the ore is passing through the plant, and the minerals have been extracted, as in that case, by flotation, the pulp then is thickened with thickeners, and from there the pulp was filtered over filters. The tailings then were discharged by, well, in one case by means of a dragline that took the tailings, because they are only carrying five to ten per cent moisture at the most, and stacked them up out of the way.

Q. They can't be pumped? They have to be handled by dry methods?

A. No, they can't be pumped.

Q. You have been fairly recently at the Zannaras mill? A. Yes, sir.

Q. Have you been up to the mill?

A. Yes, sir.



(Testimony of Ernest R. Dickie.)

Q. Does that have any—the beginnings, even, of any equipment sufficient to handle water on the [330] same basis that Eagle Picher handled it?

A. No, sir.

Q. What would be required in addition to what is there?

A. He is talking about handling 250 tons a day. The tank that he has installed—this is just my opinion——

Q. I want your observation.

A. The tank he has installed for thickener would nowhere near handle it.

Q. What would it handle?

A. Oh, I would say 25 tons a day would probably be as much as that thickener would handle. Then there are no filters, or anything like that, installed. And there is no equipment there on the site to dispose of the tailings after filtering.

Q. Now, Ernest, subsequent to this last hearing in May of 1952, and I believe previous to that, did the company proceed with engineering studies and plans for the construction of a dam above your sump to catch and impound flood waters?

A. Yes, sir.

Q. What was the proposed capacity of the dam which you were going to build at that time?

A. Approximately 20 thousand acre feet.

Q. I believe you previously testified you [331] have had considerable experience in measuring waters?

A. Yes, sir.

(Testimony of Ernest R. Dickie.)

Q. Can you tell me whether or not it is at all unusual to have one flood through the year that would fill that dam completely?

A. It is not unusual.

Q. I believe there was considerable engineering done and an application filed with the State Water Commissioner for a permit to construct the dam?

A. Yes, sir.

Q. Subsequent to that, was a protest filed by Mr. Zannaras objecting to the construction of that dam?

A. Yes, sir.

Q. And did you later ascertain that he had filed an application for a reservoir permit?

A. Yes, sir.

Q. Have you since changed the proposed dam site location?

A. Yes, sir.

Q. And where have you moved it?

A. Approximately half a mile below our point of diversion.

Q. Below a mile or so the former dam site application? [332]

A. Yes, probably a mile and a half.

Q. Are you proceeding presently with diamond drilling for the purpose of determining if that is an appropriate dam site?

A. Yes, sir.

Q. And I believe an amended application has been filed for a permit for that dam site, is that correct?

A. Correct.

Q. You propose to store flood waters and to

(Testimony of Ernest R. Dickie.)

release the normal flow of the creek through the dam, is that right?

A. That was our intention.

Q. In addition, what other things has Bagdad done for the purpose of ascertaining if a supplemental fresh water supply can be obtained?

A. We have done considerable work the last ten years in trying to locate some source of water by drilling. However, most of the drilling in the past has been done right around close to the mine, but without success. We have got maybe in one hole, we did get a very little water, but not nowheres near enough to amount to anything.

At the present time we are making a complete study of the area with the idea in mind of trying to find a location whereby we can drill and [333] secure water in the amount of not less than 400 gallons a minute.

Q. Is that one of the purposes of the employment of Dr. Thiele, to examine the course of the old channel up above, and see if that does not carry some water supply?      A. Correct.

Q. I believe now at Bagdad you have a substantial little town there, is that correct?

A. Yes, sir.

Q. Approximately how many people in it?

A. Between 16 and 18 hundred population now.

Q. Can you tell us the amount of fresh water which you have to have for the purpose of supplying the requirements of those people for domestic uses?

(Testimony of Ernest R. Dickie.)

A. Right at 200 gallons a minute at the present time.

Q. You hope to find a well, perhaps, that would give you that supply, in the event Mr. Zannaras' position is finally sustained, is that correct?

A. Yes, sir. And I would like to interject another thought along that line.

The waters of Burro Creek are not satisfactory to the Health Department of the State of Arizona for domestic use without being treated. [334] Therefore, we do have a treatment plant there, but there are times during the year when freshets come down the creek that the water is very muddy, and consequently there is not, or it is not very good for domestic water, and the thought being that if we could secure water from a well, that we would eliminate the possibility of contamination of mud, and so forth, during the flood season.

Q. That work is going forward presently?

A. Yes, sir.

Mr. Wilmer: I think that is all.

#### Cross-Examination

By Mr. Morgan:

Q. This is not strictly cross-examination on this, but could you tell me the altitude at your point of diversion? A. The altitude?

Q. Yes, and how much would fall—

A. Approximately 24 hundred, if I can recollect right.

(Testimony of Ernest R. Dickie.)

Q. And what is the altitude at Kingman Crossing, if you know?

A. I don't believe I really know.

Q. Maybe that is in these plats?

A. Three or four hundred feet lower, I think. (Indicating on chart.) About 21 hundred. [335]

Q. 21 hundred feet down to the Zannaras?

A. Yes. Yes, elevation at Zannaras at about 21 hundred, and the Kingman Crossing would be somewhat higher. At the Kingman Crossing about 2,250.

Mr. Morgan: That is all. Thank you.

Mr. Wilmer: That is all.

(Witness excused.)

Mr. Wilmer: That is all we have, your Honor.

Mr. Morgan: I would like to cross-examine Mr. Fletcher a little more.

The Court: All right.

### HERBERT C. FLETCHER

recalled as a witness, having been previously duly sworn, testified further as follows:

#### Further Cross-Examination

By Mr. Morgan:

Q. Mr. Fletcher, I asked you some questions about the evaporation of not ground water, but of surface water, the running stream. You are, of course, an expert, and familiar with what the evaporation would be of a running stream, I presume, running a certain distance?



(Testimony of Herbert C. Fletcher.)

A. You mean the total length of that area?

Q. Well, this is the question.

Assume that, say, 225 gallons of water [336] was allowed to escape continually down this creek from the Bagdad sump; and assume further, now, for this question, that there was no seepage—don't take into consideration the seepage; and also taking into consideration the fact that the fall in that distance, which is about four miles, is 150 feet; could you give us an idea in gallons, or as near as you could, what percentage of the water during the dry seasons would be taken from that stream by evaporation alone, for that gallonage?

A. No, I couldn't give you any figures like that, because I don't know what the evaporation rate is on that channel.

Q. I think the evidence heretofore is that the evaporation rate amounts to about 75 inches a year?

A. Well, that is up at Bagdad that is on the evaporation pan.

Q. Assume that the evaporation rate, for instance, in a certain month—the only months we are interested in are the summer months—would run at the rate of, say, nine or ten inches for the month.

What I am trying to find out is, are those conditions, assuming that that amount of water was allowed to escape, how much of this water would you [337] expect to reach the Kingman Crossing, eliminating seepage, now?

A. Well, that is another point, too. There is

(Testimony of Herbert C. Fletcher.)

another point, too, there. You see, I have no idea as to what the temperatures are down there at the bottom, which, with running water, actually there is much more evaporation from running water where it is shallow like that than there is from an open surface pan.

Q. You testified generally that you took into consideration in making your charts the temperature?

A. When I take into consideration the temperature, I take it over a broad area.

Q. There wouldn't be much difference, would there?      A. There certainly would.

Q. Just assume for this answer that the evaporation would amount to, say, in the dry months, ten inches per month. Now, what I want you to say, if you are able to say it, of course, is what percentage of the water under those conditions would actually reach the Kingman Crossing?

A. I don't think I would be in a position to say exactly until we made some measurements.

Q. Could you give an opinion on it? [338]

Mr. Wilmer: How wide an area is it flowing over?

The Witness: I don't know the area the stream channel covers. I don't know the amount of rock sticking out of the channel. There are a lot of factors that would cause that thing to vary, oh, one hundred per cent on a figure I might give.

Q. (By Mr. Morgan): Well, you testified that in your opinion if all the water were allowed to flow

(Testimony of Herbert C. Fletcher.)

down there, that none of it would reach the Kingman Crossing?

A. That is right, according to this chart right here.

Q. According to your charts?

A. That is right, based on this one here, of flow.

Q. Now, I am asking you to assume a situation whereby—

A. You are trying to tie me down to surface water.

Q. That is right.

A. That is a thing that I just don't feel you can tie it down to, because you have got to take into consideration you are getting a recharge from the underground water, too.

Q. Make this assumption, and maybe you [339] can answer this.

Allow 225 gallons to escape at the sump, the Bagdad sump, and assume that that runs down a channel that is impervious to seepage; and the channel has an average width, that is, the water at the surface would be five feet across, and the mileage is four miles, and the fall is 150 feet down to the Kingman Crossing, what percentage of the water would in all probability reach the Kingman Crossing?

A. If you put that down in a line canal—I think the Salt River Valley people here figure that they lose about 30 and 40 per cent per mile on the line canals from temperatures.

Q. 30 or 40 per cent a mile?

A. Yes.

(Testimony of Herbert C. Fletcher.)

Q. Then in three miles they would lose all their water?

A. If you want to assume that condition.

Q. How would the water ever be carried, as it is carried, for distances to 10, 20, and 50 miles?

A. They have to put in enough up at the top to supply that amount.

Q. The rate of evaporation would be constant, wouldn't it, whether it was a small amount or [340] large amount, practically constant?

A. Practically; what do you mean by practically?

Q. Just what I said.

A. The thing is you would have to put in more water up here. You would have to put in enough water up here to take care of the evaporation. They put in more water up here at the head, enough to take care of the water, to push it down through, to take care of the water at the bottom.

Q. The more water you put in, the more evaporation there would be, isn't that right?      A. No.

Q. Can't you answer that question?

A. Of course there isn't.

Q. Let me ask you this question: You are an expert on these things?

A. As I told you, I object to your word "expert," but go ahead.

Q. How long would it take water starting at point B to reach this Kingman Crossing, a distance of four miles——      A. I have no idea.

Q. Taking into consideration the fall of 150 feet?      A. I have no idea. [341]

(Testimony of Herbert C. Fletcher.)

Q. You claim to be an expert, you ought to know that.

A. I don't claim to know how long it takes water to go down that channel.

Q. You have no idea?

A. No; I have no idea how long it takes. There are too many factors involved.

Q. Let us assume——

A. What is the purpose of assuming anything like that?

Q. I am just trying to find out the answer in this case, of whether or not water can be allowed to come down here without a tremendous loss?

A. I think, as I have already testified, that it can't.

Q. That it can be allowed to come down without loss?

A. You have got to put in considerably more water up here in order to get it through than you would ever get out down here.

Q. We understand, of course, that there is going to be some loss.

A. This chart right here shows you that the evaporation-transpiration losses far exceed the amount you are putting through.

Q. Of course, that is based entirely on [342] your charge at Bagdad, and didn't take into consideration the water that came down from above?

A. This is taking the stream flow record, right here.



(Testimony of Herbert C. Fletcher.)

Q. Will you answer this question, or not? What do you want to do? I can't force you to answer it.

A. Well, I can't say. There are too many factors that would influence that. Certainly, you would have to put in considerably more water up at the head than you would ever expect to get out.

Q. Assume you run 225 gallons of water through a ditch straight for a distance of four miles?

A. You would have very little left.

Q. In one day.

A. You would have very little of it left at the end.

Q. What would the percentage of evaporation be?

A. Well——

Mr. Wilmer: We object to that unless he specifies the depth of the ditches, the width of the ditch, and the exposure of the water to air.

The Witness: A ditch? It is just an impossibility to answer a question as vague as that.

Mr. Morgan: Let us go back again to this [343] ditch proposition.

Q. Suppose you have a ditch four miles long, and the fall in that distance is 150 feet. How long will it take water to reach the four-mile point?

A. Well, that would have to be calculated. I don't have the tables to calculate it.

Q. You don't know how to calculate it?

A. I do by tables.

Q. You do have tables available, don't you?

A. No; I don't.

(Testimony of Herbert C. Fletcher.)

Q. And without tables, you can't calculate it? You can't give us any idea?

A. Dr. Thiele, he is the one you are questioning on the movement of water. I am——

Q. You qualified as an expert here and put in various and sundry records showing your ability as an expert in connection with water.

A. I have experience. I say I can do it if I have the tables to do it, but you have to know the various coefficients of friction, and the type of material that the ditch lining is lined with, whether lined with concrete, asphalt, whether it is an open earth ditch. Those are all factors that have to be brought in to a figuring of the speed of the water running through this ditch.

Q. Assume that it is an open earth ditch. [344]

A. I can't assume——

The Court: I have other things to do. We are not getting any place here.

The Witness: There are just too many factors that can't be answered.

Q. (By Mr. Morgan): Suppose it were run down in a pipe that distance, could you tell us?

A. No, because I don't know the coefficients of friction—whether you are running it down in a steel pipe, whether you are running it down in a concrete pipe. I don't know the coefficient of friction, the frictional loss. If you are running it down in a steel pipe, of course, you are doing away with evaporation.

Q. There would be no evaporation loss?

(Testimony of Herbert C. Fletcher.)

A. Essentially no evaporation loss.

Mr. Morgan: That is all.

Mr. Wilmer: That is all.

(Witness excused.)

Mr. Wilmer: That is all we have, your Honor.

The Court: Do you have anything?

Mr. Morgan: Yes; I have. I will recall Dr. Thiele. I would like to clear up this situation. This is for cross-examination. [345]

#### HEINRICH J. THIELE

resumed the stand and testified further as follows:

#### Further Cross-Examination

By Mr. Morgan:

Q. Just a question or two, Doctor.

Assume for the purpose of this answer that you have 225 gallons of water flowing down a ditch that doesn't lose any water by percolation, and that the ditch is five feet wide at the surface? A. Yes.

Q. And it flows four miles, and the descent during that four miles is 150 feet. Would you be able to tell me what the loss for evaporation would be, the percentage of loss?

A. I would have to have the tables of temperatures, and different figures.

Q. Assume that the temperature is the temperature at Bagdad, and assume it is in the summertime, and it is hot.

(Testimony of Heinrich J. Thiele.)

A. Then you have certain conditions that are comparable with the pan evaporation that is mentioned here (indicating on chart); open water surfaces where we have 70 per cent of pan evaporation.

Q. Would you have any idea under those circumstances how long it would take the water to run down?

A. You have to have the number of [346] friction, and the width of the canal, and all these different figures, and you need the tables to look it up.

Q. Do you have the tables available?

A. I don't have the tables available.

Q. And you cannot answer those questions?

A. I cannot answer the question without having the tables and other material available for engineering purposes necessary.

Q. Could you assume that instead of a ditch, 225 gallons would run through a pipe beginning at an elevation of 150 feet to——

A. You would need a pipeline with an awful big diameter in order to move the water through. I need again hydrologic tables which give you exactly the diameter to move water through.

When you take a pipe of small diameter, the friction is so high the water would never reach the point.

Q. Of course, there would be no percolating loss, I mean, no loss from evaporation?

A. Not by evaporation. But I don't know the chemistry of the water. It may be that you have a high corrosion effect of the water.

Mr. Morgan: No further questions.

Mr. Wilmer: No questions.

(Witness excused.) [347]

Mr. Morgan: Mr. Robinson, take the stand, please.

The Court: We will have our morning recess.

(Recess.)

The Court: You may proceed.

JOHN P. ROBINSON, JR.

called as a witness for the plaintiffs, having been first duly sworn, testified as follows:

Direct Examination

By Mr. Morgan:

Q. Will you state your name, please?

A. John P. Robinson, Jr.

Q. You have testified before in this case, of course?

A. Yes.

Q. How long have you been in that Burro Creek section?

A. Since 1939.

Q. Have you been there every year since that time?

A. Except two years spent in the Army.

Q. What years were those?

A. May, 1945, to June, 1947.

Q. When you returned in June, 1947, did you go back down to Burro Creek?

A. Yes. [348]

Q. I believe 1947 was one of the driest years that we had?



(Testimony of John P. Robinson, Jr.)

A. Well, I was told that up until the time I came here. It was dry when I came here. Previous to that I had understood it had been awfully dry.

Q. After you came back in June, 1947, did you have occasion to observe Burro Creek?

A. I did.

Q. At what points?

A. Practically all along it, except for a short distance through the canyon above our sump.

Q. By that you mean what we term the Zannaras point of diversion, up to the point of diversion which is known as the Bagdad point of diversion?

A. Yes.

Q. Wasn't water running in that stream at that time in 1947?

A. Yes; there was water running.

Q. Did it go down as far as your point of diversion?

A. Yes.

Q. What was the width of the stream, I mean, the average width of the stream itself as it ran from the Bagdad point of diversion down to the Kingman Crossing, the average width?

A. Oh, I figure that the average width [349] would be about five feet.

Q. What was the average width at that time, or, practically, the width down at your place?

A. It was around, oh, I think it was about four feet running right there.

Q. Now, have you seen this creek every year since 1939?

A. Except two years that I was away.

(Testimony of John P. Robinson, Jr.)

Q. Excepting the two years you were away?

A. Yes.

Q. And during that period, can you tell the court very briefly, now, referring only to the dry seasons up to the time you went away, how much water was running in this creek, the width of the water above the Kingman Crossing, and the width of the water as it ran down past your point of diversion?

A. Well, the driest that I can remember Burro Creek was back in the latter part of 1939. At our diversion point, the water was around two feet in width.

From the Kingman Crossing where it was very wide, and, oh, up above a mile that I walked, I would say it tapered off to an average of about, oh, three feet or four feet, somewhere in there.

Q. Now, I believe that the evidence in this case shows that the Bagdad people put in their [350] sump and began active pumping operations from their present sump in the year 1948?

A. I think it was 1948, yes.

Q. You have been familiar with the creek since that time?

A. Yes.

Q. During the dry season? By that I mean the season from, we will say, May, or the early part of June, until—when does the dry season end there?

A. Well, that depends. That varies. Sometimes it may end in September, and sometimes it may not end until December.

One year I can remember it was December 8th that the dry season ended.

(Testimony of John P. Robinson, Jr.)

Q. Well, since that time has the creek failed to run?

A. Oh, yes; it has failed to run through the summer months since 1948.

Q. And that has been invariable since 1948?

A. Yes.

Q. Just a question or two about your activity since the last trial. What have you done in the way of improvements at the mine?

Mr. Wilmer: I object to that as being immaterial, if the Court please.

Mr. Morgan: You brought it out. [351]

Mr. Wilmer: Okay, go ahead.

The Court: Mr. Zannaras testified to it. Is there any reason to disbelieve him? It would only corroborate what he said.

Mr. Morgan: Yes; I think that is right, Judge.

Q. (By Mr. Morgan): You have done some work on the mill at the river? A. Yes.

Q. Or the creek. You, I believe, were in charge of that work? A. Yes.

Q. What was the purpose of that work done at the mill?

A. To expand the capacity and make better recovery.

Q. To what capacity are you expanding at the present time?

A. At the present time, 150 tons in 24 hours.

Q. How close to completion are you now on that mill?

A. I have got the elevators ready to haul down

(Testimony of John P. Robinson, Jr.)

and set up. I have got the two tables to set on the foundations, and the sizer to put in.

Q. Now, after the trial of this action that was held in May, 1952, did you do any milling? [352]

A. Yes; we milled on through, I can't remember the exact dates, because I don't have my payroll book with me.

We milled until some time in June; I think it was toward the latter part of June, and the water started getting low, and the two men that were operating the mill weren't quite satisfied with recovery, so we closed it down, and I moved the men back to the mine some time, as I recall, around the first part of July.

Q. Was there any reason why you haven't done any milling since that time at the river?

A. Well, we weren't prepared at the time to go ahead with any program down at the mill for recovery, due to the former case that was held here, until a decision had been reached.

Q. I see. That is, a decision in the case that is now on appeal, I believe? A. Yes.

Q. The 321? A. Yes.

Q. And it is since that time that you began doing work on the mill to increase its capacity?

A. Yes. In the neighborhood of between eight and ten thousand dollars.

Mr. Morgan: I think that is all. [353]



(Testimony of John P. Robinson, Jr.)

### Cross-Examination

By Mr. Wilmer:

Q. Mr. Robinson, did I understand you to say that you were at the creek consistently once a week or better, except for the two years you were in the service?

A. Well, maybe not once a week. Sometimes it might have been fifteen days.

Q. How long were you in California?

A. Oh, four or five months, I think.

Q. How long were you in Phoenix when your wife was having a baby?

A. I think I was here seven days.

Q. You did leave, then, and go to California and work for how many months, do you recall?

A. I believe it was four, four and one-half months.

Q. The reason you didn't go ahead with any milling or changing of your mill at the Burro Creek was because you wanted to await the outcome of the case with respect to your water right?

A. In what year are you referring to?

Q. I am referring to subsequent to 1952, when you shut it down?

A. Well, in referring to the time you are trying to bring out, that I went to California—— [354]

Q. No; I am not referring to that. I understood you to say, in answer to Mr. Morgan's question, that you did nothing with respect to the mill, because you wanted to see the outcome of the case on appeal?



(Testimony of John P. Robinson, Jr.)

A. Mr. Morgan was referring to after 1952.

Q. That is what I was referring to. That is the reason you did nothing, because you wanted to find out if you had a water right, or not?

A. We wanted to wait.

Q. So you would know the outcome of that case on appeal?

A. Yes. Before we went ahead with the construction.

Q. But you are going ahead with the construction anyway? A. Yes.

Q. What is the difference between the outcome of this case here and the case on the appeal?

A. Mr. Wilmer, I believe that is personal convictions, as to the outcome.

Q. You still don't know whether you have a water right or not?

A. That is up to the court.

Mr. Morgan: We object to that. That is something that is up to the court. [355]

Mr. Wilmer: I didn't mean it in that sense. That is all.

Mr. Morgan: That is all.

(Witness excused.)

Mr. Morgan: I would like to call Mr. Dickie for one question.

## ERNEST R. DICKIE

called as a witness by the plaintiffs, having been previously duly sworn, testified as follows:

## Direct Examination

By Mr. Morgan:

Q. Mr. Dickie, you are a practical mining man?

A. I consider myself to be.

Q. And I presume you know something about piping water? A. I do.

Q. And saving water? A. Yes.

Q. Now, then, in your judgment, what would be—in order to put down water to the Zannaras point of diversion during the dry months, what would be the best method to save water, to get it down there and save it, without loss?

A. At Mr. Zannaras' point of diversion? [356]

Q. Yes.

A. You are asking me a question about the way I think is the proper way——

Q. Yes.

A. The proper way to answer that would be to go down into the gravels at the point of diversion, within that area, and get the water out of the creek.

Q. Yes. I understand that. But assume that you had to deliver the water to the Zannaras point of diversion. A. From where?

Q. From your point of diversion——

Mr. Wilmer: If it please the court——

Mr. Morgan: Just a minute until I finish.

Q. (By Mr. Morgan): How could it be put down with the least loss?

(Testimony of Ernest R. Dickie.)

A. With the least loss?

Q. Yes.

A. Well, a steel pipeline, I imagine.

Q. By pipeline?           A. Pipe, yes, sir.

Mr. Morgan: I think that is all.

### Cross-Examination

By Mr. Wilmer:

Q. Mr. Dickie, in your experience with [357] underground streams, is there any doubt in your mind but what there is in the underground gravels at the Zannaras point of diversion more than an appropriate amount if he takes it over the whole year, throughout the entire year?

A. I have always felt that there would be ample water there in the gravels at Zannaras' point, at Zannaras' mill to furnish him water the year around.

I base this opinion on the fact that I did some work just like that in the past. We had an operation over at Oatman that required water, and during the summer months there was no surface flow. And we went into the gravels there, and secured enough water to continue the operation year after year.

Another similar case is right up here in our district, over on Santa Maria, a man that owns the S-H Ranch—the Mule Shoe Ranch, I mean to say, was having difficulty in getting enough irrigation water during dry periods, and he come over and asked us what we thought about it. And I told him I thought if he would dig a trench across the creek

(Testimony of Ernest R. Dickie.)

and put in perforated pipe, cover the pipe with coarse material, that he would secure ample water.

Evidently, that has proved to be very [358] satisfactory there. I can't see that Santa Maria creek is much different from Burro Creek.

Q. At the time you are speaking of that this was done, was the Santa Maria showing any surface flow at all? A. No, sir.

Q. Normally, the Santa Maria does not show any surface flow? A. No, sir.

Q. Do you know whether or not this installation was made? A. Yes, sir.

Q. And what was the result?

A. Very satisfactory.

Q. Do you know how much water was obtained? Was it sufficient for irrigation purposes?

A. Yes, sir.

Mr. Wilmer: That is all.

Mr. Morgan: Just one question.

### Redirect Examination

By Mr. Morgan:

Q. I take it in view of your testimony you don't agree with the testimony of your expert, Dr. Thiele, when he testified——

A. You say I don't agree?

Q. Yes. [359] A. I certainly do agree.

Q. Wait a minute. When he testified that the underground flow for a year below the Kingman Crossing would amount to 150 acre feet, and during

(Testimony of Ernest R. Dickie.)

the same year the evaporation would amount to 250 acre feet?

Mr. Wilmer: If it please the court——

Mr. Morgan: Let me finish the question.

Q. You heard that testimony? A. I did.

Mr. Wilmer: I object to that, your Honor. There was not any such testimony in the record. He didn't testify to any such thing as that at all.

The Court: I don't know. There was some that I didn't hear or understand.

Mr. Wilmer: In any event, I object to the question, your Honor, upon the ground that it is calling for his conclusion. It is up to the court to determine. Whether he agrees or not is immaterial.

The Court: Yes. The court might not agree with it either.

Q. (By Mr. Morgan): Mr. Dickie, if that is true, that this testimony is correct, there would be no water available at all, underground water, at the Zannaras point [360] of diversion?

Mr. Wilmer: Same objection.

The Court: All right. Same ruling.

Mr. Morgan: You can answer that, can't you?

Mr. Wilmer: No. Same ruling.

Mr. Morgan: I didn't know what the ruling was.

The Court: Sustained.

Mr. Morgan: I beg your pardon. I didn't hear you. Well, that is all.

Mr. Wilmer: That is all.

(Witness excused.)



Mr. Morgan: We rest.

The Court: Do you have anything else?

Mr. Morgan: No.

Mr. Wilmer: That is all.

The Court: All right. I will have to have this written up some time.

Mr. Wilmer: We would like an opportunity, your Honor, to file a memorandum on it.

The Court: Yes.

Mr. Wilmer: Because we have some very definite views with respect to it. Whether or not they are of consequence, I don't know.

The Court: That remains to be seen. All right, how much time do you want after you get a copy of the transcript? [361]

Mr. Wilmer: If it is after the first of the month, I think 20 days.

The Court: All right. Twenty days after you receive the transcript.

(Thereupon, at 11:30 o'clock a.m., March 11, 1954, the case was submitted.) [362]

### Certificate

I hereby certify that I am a duly appointed, qualified and acting official court reporter of the United States District Court for the District of Arizona.

I further certify that the foregoing is a true and correct transcript of the proceedings had in the above-entitled cause on the date or dates specified

therein, and that said transcript is a true and correct transcription of my stenographic notes.

Dated at Phoenix, Arizona, this 28th day of April, A.D. 1954.

/s/ JANE HORSWELL,  
Official Reporter.

[Endorsed]: Filed May 29, 1957. [363]

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PLAINTIFFS' EXHIBIT No. 8

General Services Administration  
Region 9—Arizona, California, Nevada  
and Territory of Hawaii

Certificate of Authorization  
Domestic Tungsten Program

Number 9-1151

Date: June 21, 1951

To: Mr. John P. Zannaras,  
Zannarapolis Tungsten Mine,  
Box 500,  
Congress, Arizona.

Your notice, dated May 21, 1951, indicating your willingness to participate in the Domestic Tungsten Program and your undertaking to prospect for or produce tungsten, has been received. You are hereby authorized to deliver to the Government, in accordance with the terms of the Program, tungsten concentrates meeting the specifications contained therein. Reasonable notice should be given to the

Government with respect to the availability of any tungsten concentrates for inspection.

/s/ ROBERT B. BRADFORD,  
Regional Director.

Admitted and filed May 13, 1952.

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[Title of District Court and Cause.]

### DOCKET ENTRIES

1948

July 12—File Pltf's Complaint.

July 12—File Pltf's Praecipe for Summons.

July 12—Issue summons.

July 30—File Summons returned by Marshal showing service on David H. Palmer, Statutory Agent for Bagdad Copper Corp.

Aug. 20—File Deft's Motion for More Definite Statement.

Sept. 20—Deft's Mo. for More Definite Statement on for hearing Lockwood for Pltf. Jas. Walsh for deft. On agreement of counsel pursuant to said motion order allow pltf. to amend by interlineation to show damages for loss of profits. On mo. Walsh order allow deft. 10 days to answer.

Oct. 1—File Deft's Answer.

Oct. 4—File Pltf's Motion to Set notice for hearing 10/11/48.

1948

- Oct. 11—Pltfs' Motion to Set on for hearing. Lorna Lockwood pres. for pltf. No appearance for deft. Order pass one week to permit pltf. to amend complaint to show diversity of citizenship.
- Oct. 18—Pltf's Mo. to Set on for hearing. Lorna Lockwood for pltf. Joe Melczer for deft. Counsel for pltf. now files Motion for Leave to Amend Complaint and counsel for the defendant states no objection thereto. Order grant Motion for Leave to Amend and Order set for trial at Phoenix, Thursday, March 3, 1949, 10:00 a.m.
- Oct. 18—File Pltfs' Motion for Leave to Amend Complaint.

1949

- Mar. 2—File Deft's Praecipe for Subpoena Duces Tecum to C. H. W. Smith.
- Mar. 2—Issue subpoena duces tecum.
- Mar. 3—On for trial. Z. Simpson Cox, pres. for Pltfs. Mark Wilmer, pres. for Deft. Enter proceedings of Trial. File Pltfs' Exhibits 1 to 7, inclusive. At 5:00 p.m. order recess to 10:00 a.m., March 4, 1949.
- Mar. 4—Enter further proceedings of trial. File Deft's Exhibits A, B, C, D, E, H, I, J, K, L and N. (Deft's Exhibits L-1 and M admitted, not filed.) Order allow Deft. to substitute certified copy of Deft's Exhibits L-1 and M, and that originals thereof re-

1949

main in the records of C. H. W. Smith.

At 4:55 p.m. order recess to 2:30 p.m.,  
March 7, 1949, for argument.

Mar. 7—Order this case continued for argument  
until further order.

Apr. 5—File Subpoena Duces Tecum returned by  
Marshal showing service on C. H. W.  
Smith.

Oct. 3—On for oral argument or for the fixing of  
time for the filing of briefs. Simpson Cox  
for pltf. Wilmer for deft. On stipulation  
of counsel, order case be submitted on  
briefs and allow pltf. 20 days to file open-  
ing brief; the deft. 20 days to answer and  
the pltf. 10 days to reply.

Oct. 31—File Plaintiffs' Brief.

Nov. 28—File Defendants' Memorandum.

Dec. 20—File Plaintiffs' Reply to Defendant's  
Memorandum.

1950

Mar. 27—Pltfs having failed to prove the allega-  
tions of their Complaint by a preponder-  
ance of the evidence, Order that judgment  
will be entered for the defendant herein.

Mar. 27—Mail notice to counsel.

May 2—File Plaintiffs' Presentation of Proposed  
Findings of Fact and Decree.

May 2—File Plaintiffs' Proposed Findings of  
Fact and Decree.

May 3—File Defendant's Proposed Findings of  
Fact, Conclusions of Law and Judgment.



1950

- May 5—File Plaintiffs' Objections to Findings of Fact, Conclusions of Law and Judgment proposed by Deft.
- May 5—File Defendant's Objections to Proposed Findings of Fact and Decree by Plaintiffs.
- June 12—File Reporter's Transcript.
- Sept. 11—File Pltfs' Motion to Set for Argument as to Form of Decree noticed for hearing Monday, September 18, 1950, at 10:00 a.m.
- Sept. 18—Pltfs' Motion to Set for Argument as to Form of Decree on for hearing. Cox for plaintiff. Beauchamp for deft. On motion Cox order continue said Motion to Sept. 25, 1950, 10:00 a.m.
- Sept. 25—Pltfs' Motion to Set for Argument as to Form of Decree on for hearing. Cox for plaintiff. Wilmer for deft. Order Proposed Findings of Fact, Conclusions of Law and Decree be set for argument Oct. 2, 1950, at 2:00 p.m.
- Oct. 2—This being time fixed for settlement of Findings of Fact and Conclusions of Law. Simpson Cox for pltf. and Mark Wilmer for deft. Findings of Fact and Conclusions of Law are now settled by the Court and counsel for deft. is directed to submit engrossed Findings for signature of Court.

1951

- Jan. 2—Enter and file Findings of Fact, Conclusions of Law and Judgment that pltf. take nothing and that deft. recover costs.

1951

- Jan. 2—File Stipulation and enter and file Order allowing withdrawal of all proposed findings of fact, conclusions of law, decrees, judgments and objections thereto by attorneys filing same.
- Jan. 12—File Deft's Statement of Costs noticed for taxation January 17, 1951, at 10:00 o'clock a.m.
- Jan. 17—Tax costs for defendant as claimed in sum of \$594.12 and enter same in J.D.
- Jan. 17—Mail notice to counsel.
- Feb. 8—File Pltfs' Petition for Relief.
- Mar. 6—File Deft's Mo. to Make Petition for Relief More Definite and Certain.
- Mar. 20—Order grant Deft's Motion to Make Petition for Relief More Definite and Certain.
- Mar. 20—Mail notice to counsel.
- Mar. 28—File Plaintiff's Amended Petition for Relief.
- Apr. 11—Enter payment of \$594.12 costs in J.D.
- Apr. 16—File Defendant's Answer to Amended Petition for Relief.
- June 26—File Pltfs' Motion to Set
- July 2—Pltf's Motion to Set on for hearing. J. E. Russell for pltf. and Mark Wilmer for deft. Order Jos. H. Morgan entered as assoc. counsel for the plaintiff. Order set for trial on pending issues Sept. 11, 1951, 10:00 a.m., at Phoenix.
- July 16—File Plaintiffs' Praecept for Witnesses.

1951

July 16—Issue subpoenas.

Sept. 11—File Deposition of John Phillip Zannaras.

Sept. 11—On for trial. Russell for Pltf. Wilmer for deft. Order vacate trial setting and reset for trial Thurs., Nov. 15, 1951, at 10:00 a.m.

Oct. 9—File Subpoenas with Marshal's Return thereon.

Nov. 13—On mo. Jos. H. Morgan, counsel for pltf. Order vacate order setting this case for trial Nov. 15, 1951, and reset for trial Tues., Mar. 11, 1952, at 10:00 a.m., at Phoenix.

No. 14—Mail notice to counsel.

1952

Feb. 21—Joseph H. Morgan pres. for John Phillip Zannaras. Mark Wilmer pres. for Bagdad Copper Corp. On agreement of counsel, Order vacate order setting this case for trial March 11, 1952, and reset for trial Tuesday, May 13, 1952, at 10:00 a.m.

May 13—Plfts' Amended Petition for Relief on for trial. Jos. H. Morgan pres. for pltfs. Mark Wilmer pres. for deft. Order pltf. proceed with proof in this case prior to presentation of evidence in Civ. 321 Pret. Enter proceedings of hearing. File Pltfs' exhibits 1 to 10, incl. File Deft's exhibits A and B (1 to 11). On motion counsel for pltf., Order U. S. Tungsten be added as

1952

a party pltf. herein. At 4:45 p.m., Order recess to 10:00 a.m. tomorrow.

May 13—File Deposition of Ernest Russell Dickie.

May 14—Enter further proceedings of trial. File Pltfs' exhibits 12, 13, 14 and 16. File Deft's exhibits D to L, incl. Order record show this case is submitted without argument and that Bagdad Copper Corporation is allowed 30 days to file opening brief, Zannaras allowed 30 days to answer and Bagdad Copper Corp. 20 days to reply.

Aug. 20—File Reporter's Transcript.

Oct. 24—File Pltf's Opening Brief.

Dec. 17—File Memorandum of Bagdad Copper Corporation.

1953

Jan. 2—File Reply Brief of Robinson and Zannaras.

July 6—Order that the Order of submission herein be vacated for the purpose of taking further evidence.

July 7—Mail notice to counsel.

Nov. 18—File Plaintiffs' Motion to Set for Further Hearing.

Nov. 23—Pltfs' Motion to Set for Further Hearing on for hearing. J. H. Morgan for pltfs. and Mark Wilmer for deft. Order said motion be stricken from the calendar, subject to renewal in the spring.

1953

- Dec. 5—File Plaintiffs' Renewal of Motion to Set for Further Hearing, and Affidavit in Support of Foregoing Motion.
- Dec. 14—J. H. Morgan for pltf. No appearance for deft. Order set for further hearing, Mar. 3, 1954, at 10:00 a.m. at Phx.

1954

- Mar. 2—On for further hearing on Pltf's Petition for Relief. J. H. Morgan for plaintiffs and Mark Wilmer pres. for deft. Order this matter be continued and reset for further hearing Tues., March 9, 1954, at 10.00 a.m.
- Mar. 9—On for further hearing on Pltf's Petition for Relief. J. H. Morgan pres. for pltfs. Mark Wilmer pres. for deft. File Deft's Exhibits M, N & O, S, T, U, and V. At 4:40 p.m., Order recess to 10:00 a.m. tomorrow.
- Mar. 10—On for further hearing on Pltf's Petition for Relief. File Deft's Exhibits Y and Z, AA, AB, AC, and AD. At 4:20 p.m., Order recess to 10:00 a.m. tomorrow.
- Mar. 11—On for further hearing on Pltf's Petition for Relief. File Deft's Exhibits X, AE. Order allow deft. 20 days after reporter's transcript is available to file brief and allow pltf. 20 days thereafter to file answering brief.
- June 4—File Plaintiffs' Submitting Memorandum.



1954

June 7—File Plaintiffs' Motion for Submission of Cause, noticed for hearing Monday, June 14, 1954, at 10:00 a.m.

June 14—Plaintiffs' Motion for Submission of Cause on for hearing. Morgan for pltfs. Wilmer for deft. and states deft. has brief ready to file, and will file reply brief within the 10 days allowed. Order record show this matter will be submitted upon filing of reply brief.

June 16—File Defendant's Memorandum.

1956

May 8—File Plaintiffs Motion and enter and file Order substituting Charles Christakis in lieu of Joseph H. Morgan as counsel for pltfs.

Oct. 17—Order that Plaintiffs' Amended Petition for Relief is set for oral argument Monday, Nov. 26, 1956, at 2:00 p.m., at Phoenix.

Nov. 26—Plaintiffs' Amended Petition for Relief for oral argument. Edward B. Ashurst pres. for pltfs. Mark Wilmer appears for deft. Order that Edward B. Ashurst be entered as association counsel for pltfs; argued by Wilmer; by Ashurst. Order record show matter submitted.

1957

Feb. 1—File Plaintiffs' Application for withdrawal of Charles Christakis as one of attorneys of the U. S. Tungsten Corp.

1957

Mar. 29—This cause having been submitted upon Plaintiffs' Amended Petition for Relief, the court finds in its Memorandum filed this date that plaintiffs have failed to prove by a preponderance of the evidence that defendant has appropriated any of plaintiffs' water, and they are not entitled to an injunction. File Court's Memorandum decision.

Mar. 29—Copy of signed memorandum of 3/29/57 mailed to Mr. Wilmer and to Mr. Ashurst.

Apr. 3—File Defendant's Proposed Findings of Fact and Conclusions of Law on Plaintiffs' Amended Petition for Relief.

Apr. 8—File Plaintiffs' Objections to Defendant's Proposed Findings of Fact, Conclusions of Law and Judgment.

Apr. 17—It is ordered that Defendant's Proposed Findings of Fact and Conclusions of Law are approved and adopted as the Findings of Fact and Conclusions of Law on Plaintiffs' Amended Petition for Relief herein.

Apr. 17—Enter and file Findings of Fact and Conclusions of Law, and order that the clerk enter judgment in favor of the defendant Bagdad Copper Corporation and against the plaintiffs John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation that said plaintiffs take nothing by their amended petition for relief and that defendant have judgment for costs.

1957

- Apr. 17—5:25 p.m., Enter judgment in favor of the defendant Bagdad Copper Corporation, a corporation, and against the plaintiffs John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation that said plaintiffs take nothing by their amended petition for relief and that defendant have judgment for costs.
- Apr. 17—Mail notice to all counsel of proceedings of 4/17/57 and of entry of judgment.
- May 14—File Consent to Substitution of Moeur and Jones as counsel for Plaintiffs in place of Edward B. Ashurst.
- May 14—File Notice to Bagdad Copper Corporation and its attorneys of substitution of Moeur and Jones as counsel for pltfs. in place of Edward B. Ashurst.
- May 14—File Motion and enter and file Order that Moeur & Jones be substituted for Edward B. Ashurst as attorneys for Plaintiffs.
- May 14—File Plaintiffs' Notice of Appeal, showing service of copy on Snell & Wilmer, counsel for defendant.
- May 14—File Plaintiffs' Bond for Costs in the sum of \$250.00 with Fidelity and Deposit Company of Maryland as surety.
- May 29—File Plaintiffs' Designation of Contents of Record on Appeal.
- May 29—File Transcript of Record of U. S. Court of Appeals.

1957

May 29—File Reporter's Transcript of Proceedings.

June 17—Enter and file Order Extending Time to file the record on appeal and docket the appeal in the U. S. Court of Appeals for the Ninth Circuit to and including July 23, 1957.

July 20—File Stipulation to include Exhibits Q and R for identification in Designation.

July 20—Prepare and forward Record on Appeal to Clerk, U. S. Court of Appeals, San Francisco, Calif., (\$3.20).

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[Title of District Court and Cause.]

CLERK'S CERTIFICATE TO  
RECORD ON APPEAL

United States of America,  
District of Arizona—ss.

I, William H. Loveless, Clerk of the United States District Court for the District of Arizona, do hereby certify that I am the custodian of the records, papers and files of the said Court, including the records, papers and files in the case of John Phillip Zannaras, et al., Plaintiffs, versus Bagdad Copper Corporation, a corporation, Defendant, Numbered Civ-221 Prescott, on the docket of said Court.

I further certify that the attached original documents bearing the endorsements of filing thereon

are the original documents filed in said case, and that the attached copy of civil docket entries is a true and correct copy of the original thereof remaining in my office in the City of Phoenix, State and District aforesaid.

I further certify that the said documents, together with the original exhibits transmitted herewith, constitute the record on appeal in said case as designated, and the same are as follows, to wit:

1. Plaintiffs' Complaint, filed July 12, 1948.
2. Defendant's Answer, filed October 1, 1948.
3. Motion of Plaintiffs for Leave to Amend Complaint, filed October 18, 1948.
4. Findings of Fact, Conclusions of Law and Judgment, filed January 2, 1951.
5. Plaintiffs' Petition for Relief, filed February 8, 1951.
6. Defendant's Motion to Make Petition for Relief More Definite and Certain, filed March 6, 1951.
7. Plaintiffs' Amended Petition for Relief, filed March 28, 1951.
8. Defendant's Answer to Amended Petition for Relief, filed April 16, 1951.
9. Plaintiffs' Renewal of Motion to Set Cause for Trial, filed December 5, 1953.
10. Plaintiffs' Submitting Memorandum, filed June 4, 1954.
11. Plaintiffs' Motion for Submission of Cause and Affidavit of Zannaras, filed June 7, 1954.
12. Defendant's Memorandum, filed June 16, 1954.



13. Court's Memorandum on Petition for Relief, filed March 29, 1957.

14. Defendant's Proposed Findings of Fact and Conclusions of Law and Judgment, filed April 3, 1957.

15. Plaintiffs' Objections to Defendant's Proposed Findings of Fact and Conclusions of Law, filed April 8, 1957.

16. Findings of Fact and Conclusions of Law and (order directing entry of) Judgment, filed April 17, 1957 (being the same document as No. 14 above).

17. Reporter's Transcript of Hearing March 3 and 4, 1949, filed June 12, 1950.

18. Reporter's Transcript of Hearing March 9 to 11, 1954, filed May 29, 1957.

19. Plaintiffs' Notice of Appeal, filed May 14, 1957.

20. Bond on Appeal, filed May 14, 1957.

21. Motion and Order substituting attorneys for Plaintiffs, filed May 14, 1957.

22. Civil Docket Entries, including Clerk's notation of entry of Judgment April 17, 1957.

23. Transcript of Record (DC No. Civ-321 Prescott—CA No. 10248), filed May 29, 1957 (which includes Reporter's Transcript of Hearing May 13 and 14, 1952, filed August 20, 1952).

24. Order Extending Time to File Record on Appeal and Docket the Appeal, filed June 17, 1957.

25. Designation of Contents of Record on Appeal, filed May 29, 1957.

26. Stipulation to Include Exhibits Q and R for identification in Designation.

I further certify that the following original exhibits are transmitted herewith as a part of this record on appeal, as designated, to wit:

A. Plaintiffs' Exhibits 1, 2, 3, 4, 5, 6 and 7; and Defendant's Exhibits A, B, C, D, E, H, I, J, K, L, L-1, M and N, admitted in evidence at the trial March 3 and 4, 1949.

B. Zannaras' Exhibits 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14 and 16, and Bagdad's Exhibits A, B, D, E, F, G, H, I, J, K and L, admitted in evidence at the trial of Civ-221-Prescott and Civ-321-Prescott May 13 and 14, 1952 (Exhibit 16 is same document as Exhibit 7 at March, 1949, trial, and Exhibit D is same document as Exhibit K at March, 1949, trial; Exhibits 10 and I are attached to Answer in Civ-321-Prescott, and Exhibit L is pages 126-140 of Reporter's Transcript filed June 12, 1950, being item No. 17 of Clerk's Certificate).

C. Defendant's Exhibits M, N, O, S, T, U, V, X, Y and Z, and AA, AB, AC, AD and AE admitted in evidence at the hearing March 9 and 10, 1954, and Defendant's Exhibits Q and R marked for identification at said hearing.

I further certify that the Clerk's fee for preparing and certifying this record on appeal amounts to the sum of \$3.20 and that said sum has been paid by counsel for appellants.

Witness my hand and the seal of said Court this 20th day of July, 1957.

[Seal]      /s/ WM. H. LOVELESS,  
Clerk.

[Endorsed]: No. 15640. United States Court of Appeals for the Ninth Circuit. John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation, Appellants, vs. Bagdad Copper Corporation, a Corporation, Appellee. Transcript of Record. Appeal from the United States District Court for the District of Arizona.

Filed: July 23, 1957.

Docketed: July 23, 1957.

/s/ PAUL P. O'BRIEN,

Clerk of the United States Court of Appeals for the  
Ninth Circuit.

In the United States Court of Appeals  
for the Ninth Circuit

No. 15640

JOHN PHILLIP ZANNARAS, J. P. ROBIN-  
SON, JR., and U. S. TUNGSTEN CORPORA-  
TION,

Appellants,

vs.

BAGDAD COPPER CORPORATION, a Corpora-  
tion,

Appellee.

CONCISE STATEMENT OF POINTS TO BE  
RELIED ON BY APPELLANTS ON AP-  
PEAL

Appellants herein, John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation, intend to rely upon the following points for reversal of the judgment of the District Court:

1. The District Court erred in ruling that Burro Creek is a seasonal stream, generally wasting away, or tending to waste away during the months of June, July, August, and, on occasion, September, in each year, depending upon the rainfall on its watershed, and that during the remaining months of the year there is generally adequate water in Burro Creek for all claims of both plaintiffs and defendant.

2. The District Court erred in ruling in favor of the upstream junior appropriator-defendant and

against the downstream senior appropriator-plaintiffs based upon the evidence being "insufficient to enable the Court to determine whether the pumping by the defendant Bagdad Copper Corporation during seasons of scarcity has any bearing" on the amount of water reaching the downstream senior appropriator-plaintiffs' point of diversion.

3. The District Court erred in ruling that if the evidence is insufficient to enable the Court to determine as a fact that the use of water by an upstream junior appropriator results in injury to a downstream senior appropriator an injunction will not lie.

4. The District Court erred in ruling that the burden of proof was upon the downstream senior appropriator-plaintiff to prove that the admitted pumping operations of the upstream junior appropriator-defendant resulted in damage to the downstream senior appropriator-plaintiffs.

5. The District Court erred in its ruling denying the application of the downstream senior appropriator-plaintiffs for an injunction restraining the upstream junior appropriator-defendant from interfering with the right of the downstream senior appropriator-plaintiffs to the beneficial use of 3,000,000 gallons of water per annum from Burro Creek, in accordance with the terms of plaintiffs' Certificate of Water Right.

6. The District Court erred in its ruling that the use of water from Burro Creek by the upstream



junior appropriator-defendant did not deprive the downstream senior appropriator-plaintiffs of water at their point of diversion.

7. The District Court erred in its ruling that the admitted use by the upstream junior appropriator-defendant of water from Burro Creek is not proved to be the reason for the lack of water at the downstream senior appropriator-plaintiffs' point of diversion.

8. The District Court erred in its ruling in favor of the defendant and against the plaintiffs in that the matter of deprivation of water by the upstream junior appropriator-defendant to the detriment of the downstream senior appropriator-plaintiffs had already been adjudicated by the United States District Court for the District of Arizona (Cause No. Civ. 321—Prescott) and affirmed by the Circuit Court of Appeals for the Ninth Circuit (Cause No. 14248), 229 Fed. 2d page 920, entitled *Bagdad Copper Corporation, a corporation, Appellant, vs. John Phillip Zannaras and J. P. Robinson, Jr., Co-partners, and U. S. Tungsten Corporation, Appellees* (the same parties involved herein), wherein ruling was made that the lack of water in Burro Creek for plaintiffs' use for 5 months of each year was caused by the upstream pumping by defendant.

9. The District Court erred in its ruling that the burden of proof was upon the downstream senior appropriator-plaintiffs to show that the lack of water for plaintiffs' use was the result of the junior appropriator upstream defendant's pumping.

10. The District Court erred in ruling that the evidence adduced was insufficient to enable the Court to determine as a fact that the use of water by an upstream junior appropriator was the result of the injury to the downstream senior appropriator.

11. The District Court erred in ruling that the burden of proof is upon the downstream senior appropriator to prove as a fact that the cause of its injury was attributable to the admitted pumping operations by the upstream junior appropriator.

12. The District Court erred in ruling for the defendant when the District Court found that the evidence was insufficient to enable the Court to determine that the act of the upstream junior appropriator-defendant resulted in the lack of water available for the downstream senior appropriator-plaintiffs.

13. The District Court erred in ruling in favor of the defendant and against the plaintiffs in that such ruling is contrary to the weight of the evidence.

14. The District Court erred in ruling that the downstream senior appropriator-plaintiffs are not entitled to an injunction against the upstream junior appropriator-defendant.

15. The District Court erred in ruling that the plaintiffs are not entitled to an injunction against the defendant in that the denial is contrary to the findings and evidence on file in the office of and testified to by the Arizona State Water Commissioner, an official of the State of Arizona, charged

by law with keeping records and making investigations.

16. The District Court erred in ruling against the plaintiffs and in favor of the defendant in that the burden of proof is upon one who changes its method and means of diversion to affirmatively show that such change in method and means of diversion will not damage downstream senior appropriator.

17. The District Court erred in denying relief to the plaintiffs when the defendant in its testimony asserted it was using large amounts of water for purposes other than for its own mining operations.

18. The District Court erred in not granting the injunctive relief sought by the plaintiffs when the evidence clearly discloses that the diversions by defendant for 5 months each year is depriving the plaintiffs of water to which they are entitled.

19. The District Court erred in failing to find as a fact that the plaintiffs were the senior and the defendant the junior appropriators of waters of Burro Creek, as the evidence conclusively proved such to be true, and the priority had been previously adjudicated by the United States District Court for the District of Arizona (Cause No. Civ. 321—Prescott) and affirmed by the Circuit Court of Appeals for the Ninth Circuit (Cause No. 14248), 229 Fed. 2d page 920, entitled Bagdad Copper Corporation, a corporation, Appellant, vs. John Phillip Zannaras and J. P. Robinson, Jr., Co-partners, and U. S. Tungsten Corporation, Appellees, (the same parties involved herein).

20. The District Court erred in not granting the injunctive relief sought by the downstream senior appropriator-plaintiffs when the evidence clearly discloses that the amount of water used by the upstream junior appropriator-defendant exceeds the amount of water to which it claims to be entitled under its certificate of water right.

21. The District Court erred in failing to require the upstream junior appropriator to affirmatively and specifically plead and affirmatively prove by clear, convincing and satisfactory evidence that the admitted use of water by such upstream junior appropriator does not deprive the downstream senior appropriator of the amount of water to which it is entitled.

22. The District Court erred in denying the application of the downstream senior appropriator for injunctive relief against the upstream junior appropriator in that the effect of such denial deprives the downstream senior appropriator of property without due process of law and without the payment of just compensation therefor.

Respectfully submitted,

MOEUR & JONES,

By /s/ ANTHONY O. JONES,  
Attorneys for Appellants.

Receipt of copy acknowledged.

[Endorsed]: Filed July 25, 1957.

[Title of Court of Appeals and Cause.]

### ORDER

The petition signed by the Attorneys for the Appellants and Appellee, having been considered by the Court, and the Court being fully advised in the premises, and no adverse interest appearing,

It Is Ordered that the following described exhibits need not be printed as a part of the Transcript of Record on appeal but may nonetheless be considered a part of the record on appeal for consideration of the Court to the extent such exhibits have legal significance in reaching a decision:

#### 1949 Trial

Plaintiffs' exhibits numbered 2, 3, 4, 5 and 6

Defendant's Exhibits numbered B, C, D, E, I and J

#### 1952 Trial

Plaintiffs' exhibits numbered 2, 3, 4, 5, 6 and 7

Defendant's exhibits numbered B, E, F and H

#### 1954 Trial

Defendant's exhibits numbered Q, R, Y, Z, AB, AC and AD

It Is Further Ordered that the Transcript of Record in Cause No. 14248 in the United States Court of Appeals for the Ninth Circuit, entitled Bagdad Copper Corporation, a corporation, Appellant, vs. John Phillip Zannaras and J. P. Robinson, Jr., co-



partners, and U. S. Tungsten Corporation, Appellees, need not be printed by the Clerk of this Court as a part of the Transcript of Record in this cause, but the printed Transcript of Record as filed with the Clerk of the Circuit Court in said Cause No. 14248, including any and every exhibit therein legally applicable to this appeal, may be considered by the Court on this appeal insofar as evidentiary matters are contained therein legally applicable to Cause No. 221 in the District Court and on this appeal.

It Is Further Ordered that the Stipulation and Order do not prejudice the right of the Appellee herein to retain its legal position that this appeal cannot go behind the judgment of the United States District Court for the District of Arizona, dated January 2, 1951.

Dated this 6th day of August, 1957.

/s/ ALBERT LEE STEPHENS,  
Chief Judge;

/s/ RICHARD H. CHAMBERS,  
Circuit Judge.

Approved as to form:

MOEUR & JONES,

By /s/ ANTHONY O. JONES.

Attorneys for Appellants;

SNELL & WILMER,

By /s/ MARK WILMER,

Attorneys for Appellee.

[Endorsed]: Filed August 13, 1957.















